PHYSICAL CONSTANTS OF HYDROCARBONS

Volume I

PARAFFINS, OLEFINS, ACETYLENES, and OTHER ALIPHATIC HYDROCARBONS

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Dedicated to

JOSEPH G. ALTHER

GENERAL INTRODUCTION

American Chemical Society Series of Scientific and Technologic Monographs

By arrangement with the Interallied Conference of Pure and Applied Chemistry, which met in London and Brussels in July, 1919, the American Chemical Society was to undertake the production and publication of Scientific and Technologic Monographs on chemical subjects. At the same time it was agreed that the National Research Council, in coöperation with the American Chemical Society and American Physical Society, should undertake the production and publication of Critical Tables of Chemical and Physical Constants. The American Chemical Society and the National Research Council mutually agreed to care for these two fields of chemical development. The American Chemical Society named as Trustees, to make the necessary arrangements for the publication of the monographs, Charles L. Parsons, secretary of the society, Washington, D. C.; the late John E. Teeple, then treasurer of the society, New York; and Professor Gellert Alleman of Swarthmore College. The Trustees arranged for the publication of the A. C. S. series of (a) Scientific and (b) Technologic Monographs by the Chemical Catalog Company, Inc. (Reinhold Publishing Corporation, successors) of New York.

The Council, acting through the Committee on National Policy of the American Chemical Society, appointed editors (the present list of whom appears at the close of this introduction) to have charge of securing authors, and of considering critically the manuscripts submitted. The editors endeavor to select topics of current interest, and authors recognized as authorities in their respective fields.

The development of knowledge in all branches of science, especially in chemistry, has been so rapid during the last fifty years, and the fields covered by this development so varied that it is difficult for any individual to keep in touch with progress in branches of science outside his own specialty. In spite of the facilities for the examination of the literature given by Chemical Abstracts and by such compendia as Beilstein's Handbuch der Organischen Chemie, Richter's Lexikon, Ostwald's Lehrbuch der Allgemeinen Chemie, Abegg's and Gmelin-Kraut's Handbuch der Anorganischen Chemie, Moissan's Traité de Chimie Minérale Générale, Friend's and Mellor's Textbooks of Inorganic Chemistry and Heilbron's Dictionary of Organic Compounds, it often takes a great deal of time to coördinate the knowledge on a given topic. Consequently when men who have spent years in the study of important subjects are willing to coördinate their knowledge and present it in concise, readable form, they perform a service of the highest value. It was with a clear recognition of the usefulness of such work that the American Chemical Society undertook to sponsor the publication of the two series of monographs.

Two distinct purposes are served by these monographs: the first, whose fulfillment probably renders to chemists in general the most important

service, is to present the knowledge available upon the chosen topic in a form intelligible to those whose activities may be along a wholly different line. Many chemists fail to realize how closely their investigations may be connected with other work which on the surface appears far afield from their own. These monographs enable such men to form closer contact with work in other lines of research. The second purpose is to promote research in the branch of science covered by the monograph, by furnishing a well-digested survey of the progress already made, and by pointing out directions in which investigation needs to be extended. To facilitate the attainment of this purpose, extended references to the literature enable anyone interested to follow up the subject in more detail. If the literature is so voluminous that a complete bibliography is impracticable, a critical selection is made of those papers which are most important.

Preface

The collating and critical evaluation of physical constants of hydrocarbons is of recognized importance to all workers in hydrocarbon chemistry. With the tremendous increase in this field of research during the past fifteen years the customary sources of physical constant data have become inadequate due to more precise developments in synthesis, purification, and methods of determining physical constants. The experimental data of recent years lend themselves to more significant analyses. Hence, a greater reliability can be attributed to relationships between the different homologous series of hydrocarbons which show the dependence of physical properties upon their structure. In the present work, the critical study of the hydrocarbon constants and their interrelationships to derive useful and sound generalizations has been the desired goal.

The melting point, boiling point, specific gravity, and refractive index of all classes of pure hydrocarbons will appear in three volumes and their interrelationships in a fourth volume.

Volume one covers the paraffins, olefins, acetylenes, and other aliphatic hydrocarbons.

Volume two includes the cycloparaffins, cycloolefins, cycloacetylenes, bi- and dicycloparaffins and cycloolefins, olefin and acetylene substituted cycloparaffins and cycloolefins.

Volume three presents the aromatic series and more complex condensed ring systems of which the carcinogenic hydrocarbons are representative.

Volume four systematizes and correlates the physical properties with the structures of the hydrocarbons of homologous series, thus disclosing possible errors in experimental values. Interrelationships between other homologous series are also shown, permitting the prediction of physical properties of hydrocarbons yet unknown.

In the first volume the physical constants of hydrocarbons have been critically reviewed and the most reliable values derived therefrom. An attempt has been made to collect all the existing data to November, 1938. This has been accomplished by the use of (1) original articles, (2) Beilstein's Handbuch der Organischen Chemie, (3) R. Stelzner's Literatur Register der Organischen Chemie, (4) Chemical Abstracts, (5) Chemisches Zentralblatt, (6) British Chemical Abstracts, (7) International Critical Tables, (8) Landolt-Börnstein Tabellen, (9) various minor or unusual sources of information, and (10) unpublished research of our own and other experimenters.

This study of physical constants was started about sixteen years ago with Emma E. Crandal and carried on in a systematic manner for a period of time. Thanks are due Miss Crandal for her continued interest and help.

The research was renewed with A. V. Grosse, and Bulletins 217 and 219 were issued by Universal Oil Products Company on paraffin and mononuclear aromatic physical constants. Due to stress of other duties he had to relinquish further work on the project. Grateful acknowledgement is hereby given for his assistance.

The author wishes to express also his deep appreciation to Jack Sherman, Prudence M. Van Arsdell, Mildred Venger, and George Hulla for their constructive and critical assistance in gathering and evaluating the physical constants of hydrocarbons presented in the first volume.

Thanks are due to G. Calingaert for data on paraffins, and C. E. Boord on olefins, derived from their laboratories and for their critical review of these hydrocarbons. Appreciation is also expressed to C. L. Thomas, H. Pines, C. B. Linn, and H. S. Bloch for their co-operation.

The ideal underlying this four-volume study of the physical constants of the hydrocarbons has been to contribute to our fundamental knowledge of hydrocarbons from the scientific as well as the pragmatic points of view.

It is believed that this study will be of service to workers in all fields of hydrocarbons. The scope is such that it may be utilized in pure and applied science and in industries such as the petroleum, natural and manufactured gas, chemical, rubber, plastic, resin, and pharmaceutical.

February 15, 1939 GUSTAV EGLOFF

Physical Constants of Hydrocarbons

Paraffins, Olefins, Acetylenes, and Other Aliphatic Hydrocarbons

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Volume I

I. Introduction

1. Foreword

Under the impetus of a constantly increasing demand for hydrocarbon products, the amount of research performed in this field of science has been particularly great during the past fifteen years. An urgent need has been felt for a critical digest of all data pertaining to physical constants of hydrocarbons.

This work will present in the first three volumes the most reliable values to use of the melting points, boiling points, specific gravities, and indices of refraction of hydrocarbons, together with all the data from which these values are derived. The hydrocarbons are grouped as paraffins, olefins, acetylenes, cycloparaffins, cycloolefins, and aromatics, and the mixed types which may belong to two or more groups. The first volume contains the paraffins, olefins, acetylenes, and other aliphatic hydrocarbons. The second volume contains the cycloparaffins, cycloolefins, bi- and dicycloparaffins, and bi- and dicycloolefins, together with compounds which may belong to two or more of these classes, such as alkenyl-substituted cycloparaffins and alkynyl-substituted cycloparaffins. The terpenes have not been classified in a separate section due to the fact that they belong in a number of the groups already mentioned. The aromatic hydrocarbons are covered in the third volume. The fourth volume will cover the correlation of physical properties with structure, allowing detection of errors in existing data, prediction of the constants of unknown hydrocarbons with confidence, and derivation of relationships giving a deeper insight into the structure of hydrocarbon molecules.

Although recent efforts have been made to correlate the physical properties of restricted groups of hydrocarbons with structure, no comprehensive attempt has been made to do this systematically *for all classes of hydrocarbons*. This is not surprising in view of the fact that the physical constants of all hydrocarbons have not been collated or critically evaluated heretofore.

The present study is restricted to the four physical constants already mentioned chiefly because they are frequently employed in the identification of hydrocarbons and in industrial engineeering. Other constants are also of great importance for present day science and technology. Hence there is an increasing need to collect and study them. These studies are under way and will be reported upon by us at a later date. A few of the constants may be mentioned: the critical pressure, temperature, and volume; viscosity, surface tension, specific heats; heats of formation, vaporization, and fusion; free energies, entropies, parachor values, and octane numbers.

Probably the outstanding fact in collating hydrocarbon constants has been the inordinate number of experiments carried out on certain compounds in contrast to almost none on others. This fact has given a false impression to investigators who believe that the data on physical constants of hydrocarbons are quite complete. In this work the effort has been toward collecting all the studies which have been made.

No doubt some physical constants have been overlooked, and the author would appreciate receiving the references so that the data may be included in future editions. Will any experimenters who have unpublished data that can be released communicate with the author?

Many gaps appear in the physical constant data where the possible isomers are relatively few in number. Of course, where the possible isomers increase rapidly as is the case with pentadecane (4,347 isomers) and eicosane (366,319 isomers) there is no probability of synthesizing all of these isomers.

2. *Description of the Tables*

The aliphatic hydrocarbons tabulated in Volume I are grouped into ten sections:

1. Alkanes or Paraffins
2. Alkenes or Olefins
3. Alkadienes or Diolefins
4. Alkatrienes or Triolefins
5. Alkatetraenes or Tetraolefins
6. Alkapentaenes or Pentaolefins
7. Alkahexaenes or Hexaolefins
8. Alkynes or Acetylenes
9. Alkadiynes or Diacetylenes
10. Mixed Alkene-Alkynes of the Aliphatic Series

In each section the compounds are listed in order of increasing number of carbon atoms. For molecules containing a given number of carbon atoms, the isomers of the paraffin, olefin, and acetylene series are listed in order of increased branching as illustrated in the following:

Alkanes	Alkenes	Alkynes
n-heptane	heptene-1	heptyne-1
	heptene-2	heptyne-2
	heptene-3	heptyne-3
2-methylhexane	2-methylhexene-1	
3-methylhexane	3-methylhexene-1	3-methylhexyne-1
	4-methylhexene-1	4-methylhexyne-1
	5-methylhexene-1	5-methylhexyne-1
	2-methylhexene-2	
	3-methylhexene-2	
	4-methylhexene-2	4-methylhexyne-2
	5-methylhexene-2	5-methylhexyne-2
	2-methylhexene-3	
	3-methylhexene-3	
	2-ethylpentene-1	
3-ethylpentane	3-ethylpentene-1	3-ethylpentyne-1
	3-ethylpentene-2	
2,2-dimethylpentane		
2,3-dimethylpentane	2,3-dimethylpentene-1	

Alkanes	Alkenes	Alkynes
2,4-dimethylpentane	2,4-dimethylpentene-1	
3,3-dimethylpentane	3,3-dimethylpentene-1	3,3-dimethylpentyne-1
	3,4-dimethylpentene-1	3,4-dimethylpentyne-1
	4,4-dimethylpentene-1	4,4-dimethylpentyne-1
	2,3-dimethylpentene-2	
	2,4-dimethylpentene-2	
	3,4-dimethylpentene-2	
	4,4-dimethylpentene-2	4,4-dimethylpentyne-2
2,2,3-trimethylbutane	3-methyl-2-ethylbutene-1	
	2,3,3-trimethylbutene-1	

3. The Geneva System of Nomenclature for Aliphatic Hydrocarbons

The nomenclature of hydrocarbons used by many experimenters varies according to individuals of the same and different countries and the period in which they worked. Much has been written about the use of a uniform system of naming compounds; some countries use the Greek alphabet in designating the position of groups in the molecule, while other countries use numbers or a combination of Greek letters, numbers, and primed numbers. In this study of aliphatic hydrocarbons, the Geneva system has been used due to its simplicity and consistency.

Many hydrocarbons were named before their structure had been determined. The names by which these compounds are known naturally give no indication of their structure. When the structure of a compound is later determined, the common name may be so well established by usage that it persists even though it would be more logical and informative to adopt the scientific name. A well known compound is often reported by several names—e.g. neopentane, tetramethylmethane, 2,2-dimethylpropane, all refer to the molecule whose carbon skeleton is

$$\begin{array}{c} C \\ | \\ C-C-C. \\ | \\ C \end{array}$$

Since users of the present work may not be completely familiar with the Geneva system, the hydrocarbon rules taken from the Definitive Report of the Commission on the Reform of the Nomenclature of Organic Chemistry (translated by A. M. Patterson and appearing in the *Journal of the American Chemical Society, 55,* 3905–25 (1933) with his comments) are given below for reference.

"4. The ending *ane* is adopted for saturated hydrocarbons. Open-chain hydrocarbons will have the generic name *alkanes.*"

Comments—"The name "alkane" is better and shorter than "paraffin," especially since the latter term is now so commonly applied to a solid mixture." (This statement is no longer accurate (Dec. 15, 1938) as applied to the Petroleum Industry where the gaseous, liquid, and solid hydrocarbons of the C_nH_{2n+2} group are called paraffins.)

"5. The present names of the first four normal saturated hydrocarbons (methane, ethane, propane, butane) are retained. Names derived from the Greek or Latin numerals will be used for those having more than four atoms of carbon."

Comment—"The words "or Latin" have been added to the Geneva rule (No. 4) because *nonane* is almost universally used for C_9H_{20} instead of the Greek derivative *enneane* (as also is *nona-* instead of *ennea-* in combination, as in *nonadecane*); and because *undecane* appears oftener than *hendecane,* although the latter has a respectable standing. For most of the alkanes, however, names of Greek derivation are customary."

"6. Branched-chain hydrocarbons are regarded as derivatives of the normal hydrocarbons; their names will be referred to the longest normal chain present in the formula by adding to it the designations of the side chains. In case of ambiguity, or if a simpler name would result, that chain which admits of the maximum of substitutions will be selected as the fundamental chain."

Comment—"This rule may require further interpretation. The version published by the Journal of the Chemical Society is quite different. It reads: "Branched-chain hydrocarbons are regarded as derivatives of normal hydrocarbons; their names will be determined by the longest chain containing the maximum number of double or triple linkings (preference being given to the double linking where ambiguity arises), or, in the case of saturated hydrocarbons, by the longest chain in the formula. In cases where there might be doubt as to the choice of the longest chain, that one will be selected which admits of the maximum of substitution." It was the impression of the writer that this version, which he considers preferable, was adopted at Liege, but he has followed the French version of the "Comptes rendus" of the meeting.

"If the French version is accepted, then it seems best to interpret it as referring to *saturated* hydrocarbons only, unsaturated hydrocarbons being treated in rules 8-10. The phrase "or if a simpler name would result" ("ou si cela donne un nom plus simple" in the French version) is of doubtful value as there may be differences of opinion as to which name is "simpler". In saturated branched-chain hydrocarbons, in the writer's opinion the longest chain present should be chosen as the fundamental one, and if there are two or more choices for the longest chain, then that one should be chosen in which there is the greatest number of substitutions (the reason being that the substituting radicals, while more numerous, will be of simpler structure).

Example:
$$\begin{array}{l} CH_3CH_2CH_2CH_2\overset{}{C}HCH_2CH_2CH_2CH_3 \\ \qquad\qquad\qquad\quad | \\ \qquad\qquad\qquad CH(CH_3)CH(CH_3)CH_3 \end{array}$$

By the principle of the "longest chain" the name would be 5-(1,2-dimethylpropyl)-nonane; but according to the rule the name 4-butyl-2,3-dimethyloctane (which avoids a branched side chain) is the one to be chosen if it seems simpler."

"7. In case there are several side chains, the order in which such chains are named will correspond to the order of their complexity. The chain having the greatest number of secondary and tertiary atoms will be considered the most complex. The alphabetic order may also be followed in such cases."

Comment—"The Committee members were divided in their preferences between an order of radical names based on structure (for example, one based on increasing weight, as methyl, ethyl, butyl) and an alphabetic order as used, for example, in *Chemical Abstracts.* The two possibilities were hence left side by side, not only in this rule but also more generally in rule 63.

"The advocates of the structural basis for such an order did not formulate any complete rule, and the wording of rule 7 is not very clear. In the writer's opinion it means that the name of the hydrocarbon radical of lowest weight is to be announced first, then that of the next highest weight, and so on, and that as between isomers the normal radical comes first, then the ones of branched structure, e.g., methyl, ethyl, propyl, isopropyl, butyl, isobutyl. The rule does not decide completely between branched isomers, and neither this rule nor rule 63 prescribes any structural order for the host of substituting groups which are not hydrocarbon radicals (such orders have been constructed, however.)

"The beauty of the alphabetic order is that it furnishes a means of arranging in order, almost instantly, substituents of any kind. Its only difficulty is that a few radical names differ substantially in spelling in certain languages (e.g. ethyl, athyl). In such cases a transposition would

be necessary in the translation. Fortunately, the exact order of prefixes in an organic name is not of great importance except in indexes. Example of the alphabetic order: butyl, ethyl, isobutyl, isopropyl, methyl, propyl. (Or, if *iso-* is italicized, butyl, *iso*-butyl, ethyl, methyl, propyl, *iso*-propyl.) For further illustrations the indexes to *Chemical Abstracts* may be consulted."

"8. In the names of open-chain unsaturated hydrocarbons having one double bond the ending *ane* of the corresponding saturated hydrocarbon will be replaced by the ending *ene*; if there are two double bonds, the ending will be *diene*, etc. These hydrocarbons will bear the generic names *alkenes*, *alkadienes*, *alkatrienes*, etc. Examples: propene, hexene, etc."

Comments—"This rule follows the Geneva system and in addition introduces the generic names *alkene*, etc., corresponding to *alkane*. Strictly interpreted, it calls for the replacement of *ethylene* by *ethene*. The writer doubts if this change will ever become general but the higher names, as propene, butene, etc., seem to be slowly supplanting the older propylene, butylene, etc. Examples: $\overset{1}{C}H_2 = \overset{2}{C}H\overset{3}{C}H_3$, propene; $\overset{1}{C}H_2 = \overset{2}{C}H\overset{3}{C}H_2\overset{4}{C}H_3$, 1-butene; $\overset{1}{C}H_3\overset{2}{C}H = \overset{3}{C}H\overset{4}{C}H = \overset{5}{C}H\overset{6}{C}H_3$, 2.4-hexadiene. The double bond receives its number from the lowest-numbered carbon atom to which it is attached. The principle of "lowest numbers" (see rule 64) is always applied; for instance, 1-butene might also be called 3-butene, but the lower number is selected.

"For the naming of branched unsaturated hydrocarbons see the comments on rule 10."

"9. The names of triple-bond hydrocarbons will end in *yne*, *diyne*, etc. They will bear the generic name *alkynes*. Examples: propyne, heptyne, etc."

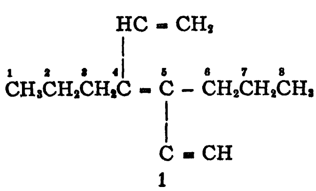
Comment—"The Geneva ending *-ine* for these hydrocarbons has been replaced by *-yne* because *-ine* is reserved for names of organic bases (see rule 33). The English pronunciation of -yne is like that of -ine in "wine." It seems unlikely that the time-honored "acetylene" will be replaced by "ethyne" but the names for the higher members, such as propyne, $(\overset{1}{C}H \equiv \overset{2}{C} - \overset{3}{C}H_3)$, 1-butyne $(\overset{1}{C}H \equiv \overset{2}{C} - \overset{3}{C}H_2\overset{4}{C}H_3)$ and 2,4-hexadiyne $(\overset{1}{C}H_3\overset{2}{C} \equiv \overset{3}{C} - \overset{4}{C} \equiv \overset{5}{C}\overset{6}{C}H_3)$ will probably be increasingly used."

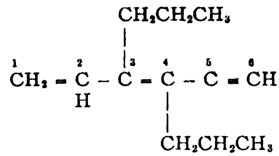
"10. If there are both double and triple bonds in the fundamental chain the endings *enyne*, *dienyne*, etc., will be used. The generic names of these hydrocarbons will be *alkenynes*, *alkadienynes*, etc."

Comment—"The endings *-enyne* and *-dienyne* given in the rule indicate that the double bonds are always to be expressed first, then the triple bonds. E.g.,

$$\overset{1}{C}H \equiv \overset{2}{C} - \overset{3}{C}H = \overset{4}{C}H\overset{5}{C}H = \overset{6}{C}H\overset{7}{C} \equiv \overset{8}{C}H, \text{ octa-3,5-diene-1,7-diyne.}$$

"If we interpret rule 6 as applying to saturated hydrocarbons only (see the comments on rule 6), then the Committee has made no rule for the naming of *branched unsaturated* hydrocarbons. Two alternatives seem to be open: (1) to follow the Geneva system and choose the longest chain in the molecule as the fundamental one, even if it does not contain the double or triple bonds. (2) To consider the unsaturated linkages as functions (they are so listed in rule 52) and, guided by rule 18, to select as the fundamental chain that one which contains the maximum of double and triple bonds (even if it is not the longest present in the molecule). Example:





2

By method (1): 4-ethenyl-5-ethynyl-4-octene. By method (2): 3,4-dipropyl-hexa-1,3-dien-5-yne. (As to beginning the numbering with the double instead of the triple bond, see rule 64.) For general use the writer favors method (2) as being in accordance with the treatment of other functions, and also as better expressing the nature of the hydrocarbons in the ending of the name."

"54. Univalent radicals derived from saturated aliphatic hydrocarbons by removal of one atom of hydrogen will be named by replacing the ending *ane* of the hydrocarbon by the ending *yl*."

Comment—"Examples: methyl, ethyl, pentyl (or amyl), etc. Since isopropylidene is recognized (rule 56) it was no doubt the intention of the Committee to recognize isopropyl similarly."

"55. The names of univalent radicals derived from unsaturated aliphatic hydrocarbons will have the endings *enyl, ynyl, dienyl,* etc., the positions of the double or triple bonds being indicated by numerals or letters where necessary." •

Comment—"Examples: $CH_2 = CH—$, ethenyl (or vinyl); $CH \equiv C—$, ethynyl; $CH_3 - CH = CH - CH_2—$, 2-butenyl; $CH_2 = CH - CH = CH-$, 1,3-butadienyl."

"56. Bivalent or trivalent radicals derived from saturated hydrocarbons by removal of 2 or 3 hydrogen atoms from the same carbon atom will be named by replacing the ending *ane* of the hydrocarbon by the endings *ylidene* or *ylidyne.* For radicals derived from unsaturated hydrocarbons, these endings will be added to the name of the hydrocarbons. The names isopropylidene and methylene are retained."

Comment—"Examples: $CH_2<$, methylene; $CH_3CH<$, ethylidene; $CH_3CH_2CH<$, propylidene; $(CH_3)_2C<$, (1-methylethylidene) or isopropylidene; $CH_3C\equiv$, ethylidyne; $CH_2 = CH - CH_2CH<$, 3-butenylidene. In the last example the number must be changed from 1 (in the name of the hydrocarbon, 1-butene) to 3 in order to indicate the position of the double bond correctly. The new ending *ylidyne,* formed by analogy with "ylidene," should prove useful."

"57. The names of bivalent radicals derived from aliphatic hydrocarbons by removal of a hydrogen atom from each of the two terminal carbon atoms of the chain will be ethylene, trimethylene, tetramethylene, etc."

Comment—"Only saturated radicals are provided for: $— CH_2CH_2 —$, ethylene; $— CH_2CH_2CH_2 —$, trimethylene, etc. (In an earlier draft the ending *ylene* was employed, thus; $— CH_2CH_2—CH_2CH_2 —$, butylene; $— CH_2CH — CHCH_2 —$, 2-butenylene.)"

"63. The order in which prefixes or radicals are stated (alphabetic order or conventional order) remains optional."

Comment—"See the comments on rule 7. There is no generally accepted "conventional order" for all prefixes."

"64. In Aliphatic compounds the carbon atoms of the fundamental chain will be numbered from one end to the other with the use of Arabic numerals. In case of ambiguity the lowest numbers will be given (1) to the principal function, (2) to double bonds, (3) to triple bonds, (4) to atoms or radicals designated by

prefixes. The expression "lowest numbers" signifies those that include the lowest individual number or numbers. Thus, 1,3,5 is lower than 2,4,6; 1,5,5 lower than 2,6,6; 1,2,5 lower than 1,4,5; 1,1,3,4 lower than 1,2,2,4."

Comment—"Examples: $CH_2 = CHCH_2CH_3$, 1-butene (not 3-butene); $CH_2 = CHC \equiv CH$, 1-propen-3-yne (not 3-propen-1-yne); $CH_2 = CH - CH_2OH$, 3-propen-1-ol (not 1-propen-3-ol; the name allyl alcohol may also be used) $CHCl_2CH_2CH = CH_2$, 4,4-dichloro-1-butene.

"The last example illustrates a difficulty of interpretation which might arise; it might be thought that, the numbers 1,1,3 being lower than 1,4,4, the compound should be named 1,1-dichloro-3-butene. This, however, was apparently not the intention of the Committee, for 1-butene is the parent compound. The British version makes this interpretation clearer by translating the French "En cas d'ambiguité" rather freely as "To avoid ambiguity."

"The principle of "low numbers" also applies to cyclic compounds, with due regard to their different structure (e.g., bridges and hetero atoms are usually given preferred positions). Examples: 1,3-cyclohexadiene; 3-cyclohexen-1-one or simply 3-cyclohexenone; 4,4-dichlorocyclohexene.

"*Position of Numbers.*—Where shall position numbers be placed, before or after the parts of the name to which they refer? Usage varies; some chemists place them before, some place them after, some use a combination. The Committee has left full latitude on this point. The examples in the French version usually show the numbers placed after; the examples in these comments follow the practice of *Chemical Abstracts* in being placed before. Each method has certain advantages. In Beilstein numbers placed after are in parentheses, those placed before are not, e.g., "2-methyl-butanol-(4).""

4. *Geometrical Isomerism*

Until recently chemists have considered the structure of ethylene and its derivatives as being composed of two tetrahedra sharing an edge in common. We now know that the two carbon and four hydrogen atoms in ethylene are coplanar, the carbon-hydrogen single bonds and carbon-carbon double bond forming 120° angles.

Due to the fact that rotation about the double bond is not a permissible degree of freedom, geometrical isomers exist for compounds containing double bonds which have no analogy in the paraffin series. Geometrical olefinic isomers are theoretically derivable from each other by a 180° rotation of the two parts of the molecule about the double bond.

If the four groups or three of the four attached to the two carbon atoms forming the double bond are the same, no geometrical isomers are possible, since a 180° rotation of one part of the molecule about the double bond is equivalent to a 180° rotation of the the molecule as a whole. If two of the four groups are the same, geometrical isomerism occurs only when the two groups are attached to each of the two carbon atoms forming the double bond. The isomers are *cis* or *trans* depending upon which side of the double bond the groups lie.

In the diolefins, geometrical isomerism does not occur when the double bonds are adjacent, as in allene. This is due to the fact that the four groups attached to the allenic carbons do not lie in the same plane, as is evidenced by the occurrence of optical activity in allenic derivatives. In the polyolefins, geometrical isomerism may occur, a maximum of 2^x isomers in a compound containing x double bonds being possible when all the groups are different.

In acetylene derivatives, no geometrical isomerism occurs, even though rotation about the triple bond is inhibited. This is because the two groups attached to the two carbon atoms forming the triple bond are collinear with the triple bond.

In the physical constants reported for the olefins, some authors have apparently overlooked the possibility of geometrical or *cis, trans* isomerism. These compounds have been indicated in the tables by writing "mixtures of geometrical isomers" or "mixtures of *cis, trans* isomers" above the carbon skeleton. No evaluations are given since the variations in the data of different authors may indicate varying amounts of these geometrical isomers.

5. *Critical Evaluation of the Data and Calculation of the Most Probable Values*

A. Introduction

A considerable number of experiments carried out on different hydrocarbons show inconsistencies in the data of a given compound when determined by one or several investigators. This is more generally true of the olefins and acetylenes than of the paraffins, due to the greater instability and difficulty of preparation.

In recent years very accurate data on physical constants of hydrocarbons have been obtained as a result of carefully designed experiments on the purest compounds with boiling points reliable to within 0.01°, specific gravities and indices of refraction to within one or two parts in 100,000.

If every investigator had given the probable errors of his constants, the task of evaluating the data would be relatively simple. The probable error is seldom given, and consequently it has been necessary in the present work to estimate the reliability of the different workers and their data in order to determine by correlation the most probable values of the constants. Unfortunately there is no one way in which to calculate the probable errors. Wherever possible, recourse has been made to the original article in contrast to the use of abstract sources. Where sufficient detail in the mode of synthesis, purification, and measurement is given, all the pertinent facts are utilized in forming an estimate of the probable error in the value of a constant.

More reliable values of physical constants of hydrocarbons can be obtained by the close co-operation of organic and physical chemists, than by either group alone. The organic chemist in preparing compounds is not primarily interested in determining the physical constants but does so in order to establish the identity of his product. On the other hand, the physical chemist is generally better able to make physical measurements of high accuracy but does not prepare compounds of high purity.

An important development is under way to synthesize several hundred hydrocarbons of different homologous series and to determine their physical constants. This program is sponsored by the American Petroleum Institute as a four-year plan. The hydrocarbons will be synthesized and purified under the direction of Prof. C. E. Boord of Ohio State University. This part of the project is financed through twenty-four oil companies[1].

A number of other laboratories with specialists in their requisite fields will carry out experimental work on the antiknock and other physical properties without cost to the project. The resultant of this co-operative effort should be a set of physical constants of a high order of accuracy and completeness.

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B. Limitations of the Data

Specific gravity is used to illustrate the order of magnitude of the errors in the data. The specific gravity of a compound is a function of temperature, pressure, and purity. Considering the effect of temperature, the value of dD/dt at 20° for normal heptane is − 0.0008563 per degree, and consequently the change in temperature which would cause a change in the specific gravity of one unit in the fifth decimal place is calculated to be 0.012°.

The dependence of the specific gravity on pressure is small but it is not entirely negligible when the value is given to five significant figures, as shown by the data of Smith, Beattie, and Kay [1] on the compressibility of normal heptane. They give the following results for the specific volume at 30°:

Specific volume, Cm.^{3}/g.	Pressure, atm.
1.4793	7.12
1.4756	19.08
1.4723	31.04
1.4700	43.00
1.4133	351.25

From the above data, the change in pressure which would cause a change in the specific gravity of one unit in the fifth decimal place is found to be 55 mm.

1. L. B. Smith, J. A. Beattie, and W. C. Kay, J. Am. Chem. Soc., 59, 1587, 1937

An error in the specific gravity of normal heptane due to an impurity may be calculated as follows. Assume that a sample is contaminated by 2-methylhexane. Knowing the specific gravities in each case, we can calculate how much of the latter would cause the specific gravity of the former to be in error by one unit in the fifth decimal place. The specific gravities at 20° for *n*-heptane and 2-methylhexane are 0.68375 and 0.67873 respectively. Assuming a perfect solution, and resulting additivity of volumes, the amount of 2-methylhexane, Δ, can be calculated from the equation

$$\frac{1-\Delta}{0.68375}+\frac{\Delta}{0.67873}=\frac{1}{0.68374}$$

Solving this equation, $\Delta = 0.0019$ or 0.19 percent. The sample of *n*-heptane must therefore be of 99.8 percent purity in order that the specific gravity be accurate to within one unit in the fifth decimal place.

The presence of high molecular-weight paraffin impurities causes a more pronounced effect due to the greater difference in specific gravities. Since the specific gravity of *n*-decane at 20° is 0.7304, its presence in *n*-heptane to the extent 0.024 percent would cause an error of one unit in the fifth decimal place of the specific gravity of *n*-heptane.

C. *Melting Points*

There is a greater paucity of data for the melting points of aliphatic hydrocarbons than the other physical constants studied. For melting points the values show greater variations for each compound than for any other physical constants reported. These inaccuracies and general lack of data may be due to the difficulties involved in the precise measurements compared to other constants and the tendency of many hydrocarbons to supercool forming amorphous rather than crystalline solids. The equilibrium between liquid and solid during a melting point determination may not have been reached; therefore the value reported is in error.

Where several melting point determinations are available on a given compound, the weighted average was selected as the most probable value. The general rule followed is that impurities lower the melting point of a pure compound. The weightings assigned to the individual values were taken as inversely proportional to the squares of the probable errors, in accordance with the theory of errors.

The melting point of those hydrocarbons which have been determined are shown in the tables. The bold face number given is the best melting point value as of today.

D. *Boiling Points*

The boiling point of a compound can be determined with a high order of accuracy, except in the case of hydrocarbons which undergo cracking, dehydrogenation, or other changes such as isomerization and polymerization during the determination.

The boiling point of a liquid is a sensitive function of the pressure, the dependence being given by the Clausius-Clapeyron equation. For compounds where several boiling points are given under various pressures, the normal boiling point at 760 mm may be calculated reliably by fitting all the data to the integrated form

of the Clausius-Clapeyron equation. Due to the lack of sufficient data in most cases, this procedure is not justified, and the normal boiling point for many hydrocarbons is derived by taking the *weighted* mean of all the values at 760 mm.

For each compound the boiling point data are listed in order of decreasing pressure. The pressure in millimeters corresponding to each boiling point is given unless this pressure is 760 mm in which case it is omitted. The value given in bold-face type for each hydrocarbon is the most accurate boiling point to use.

E. Specific Gravity

The number of specific gravity values for the aliphatic hydrocarbons is greater than for the other constants. The specific gravity values may be determined to a higher percentage accuracy than either the melting or boiling point.

In general, we assume that the variation of specific gravity with temperature may be expressed by the equation

$$D_4^t = D_4^{t_0} + a(t - t_0) + b(t - t_0)^2. \qquad (1)$$

Here D_4^t is the specific gravity of the substance at the temperature t (the density relative to water at 4°); $D_4^{t_0}$ is the specific gravity at some constant temperature t_0, and a and b are constants to be evaluated; t_0 is usually 20°. For compounds of low boiling points, 0° or the melting point or the boiling point is used.

The constants $D_4^{t_0}$, a, and b are determined by the method of least squares[1] in every case where there is a sufficient number of specific-gravity values available. (If several values are available for the same temperature, the method of least squares is degenerate, and is equivalent to taking the weighted average of those values.)

From equation (1) the derivative of D with respect to t is

$$\frac{dD}{dt} = a + 2b(t - t_0) \qquad (2)$$

$$= a\left[1 + \frac{2b}{a}(t - t_0)\right] \qquad (3)$$

Instead of giving equation (1) explicitly, the value of $D_4^{t_0}$ (t_0 = 20° wherever the data permit) is given in the specific gravity column, and equation (3) is given in the additional-data column.

In many cases values of $D_{t_1}^{t_0}$ are reported, t_1 being different from 4°. In these cases, the values of $D_4^{t_2}$ are calculated by the formula

$$D_4^{t_2}\text{ (hydrocarbon)} = D_{t_1}^{t_0}\text{ (hydrocarbon)} \times D_4^{t_1}\text{ (water)}$$

The values of $D_4^{t_0}$ of water are taken from the International Critical Tables. $D_{t_1}^{t_2}$ is numerically equal to the density of t_2 in c.g.s. units when t_1 refers to the

1. The method of least squares is described in J. B. Scarborough, "Numerical Mathematical Analysis", Johns Hopkins Press, Baltimore, 1930.

density of water at 4° which is 1.00000 g/cc. In general a straight line is found to be sufficient to represent the hydrocarbon specific gravities over a temperature range of 30° to 40° ($b = 0$) but that a parabola is usually justified over a larger temperature interval.

From the values of dD/dt, the coefficient of expansion of the liquid at any temperature may be calculated by the formula

$$\alpha = -\frac{1}{D} \cdot \frac{dD}{dt}$$

This equation follows from the definition of α:

$$\alpha = \frac{1}{v} \cdot \frac{dv}{dt}$$

where v, the specific volume, is defined as the reciprocal of D, the density.

As an example of the application of the method of least squares to the evaluation of specific gravity data, the following table for n-nonane is given.

TABLE I—SPECIFIC GRAVITY OF N-NONANE

Weighting	t° C.	D_4^t (Exper.)	D_4^t (Calc.)	$\Delta \cdot 10^4$
1	150	0.6096	0.6101	−5
1	130	0.6272	0.6273	−1
1	110	0.6445	0.6442	3
1	90	0.6619	0.6610	9
1	70	0.6776	0.6775	1
1	50	0.6945	0.6938	7
1	30	0.7105	0.7099	6
25	25	0.71398	0.71392	0.6
25	20	0.71808	0.71790	1.8
25	20	0.71780	0.71790	−1.0
2	20	0.7176	0.7179	−3
25	20	0.71770	0.71790	−2.0
1	15	0.7213	0.7219	−6
1	10	0.7260	0.7258	2
1	−10	0.7417	0.7415	2
1	−30	0.7573	0.7570	3
1	−50	0.7726	0.7723	3

In column 1 the weightings assigned to the specific gravity values are taken to be inversely proportional to the squares of the probable errors, in accordance with theory. Wherever possible, an estimate of the accuracy of the work was determined by reference to the original articles containing experimental details of synthesis, and the methods used in determining the physical constants.

In column 2 the temperatures are given in degrees Centigrade.

In column 3 the experimental values of the specific gravities are given.

From the first three columns the constants in equation (1) were determined by the method of least squares. The equation is

$$D_4^t = 0.71790 - 0.0007952(t - 20) - 0.0000002622(t - 20)^2.$$

In column 4 the values of D_4^t calculated from this equation are given.

In column 5 the differences between the observed and calculated values multiplied by 10^4 are given.

The above equation reproduces the data to within about three units in the fourth decimal place, or about one part in 2200; this accuracy appears to be typical for the paraffins.

It should be pointed out that for any given compound the values calculated for D_4^{20} and dD/dt by the method of least squares depend upon all the dat. of that compound at all temperatures. Once the weightings are assigned to the individual values, the calculation is straightforward and has the advantage over graphical methods in that it eliminates the "personal equation".

Where the values for a given compound are reported over a small temperature interval (10 degrees or less) the equation for dD/dt is not usually determined.

The specific gravity value given at 20° in bold face type for each hydrocarbon is the most accurate one to use. In many cases the last figure is given in small print, e.g. 0.7666_3. This signifies that it is not to be retained but is inserted in order to eliminate errors in calculating specific gravities at temperatures other than 20°.

The specific gravity values for each compound are listed in order of decreasing temperature. When the specific gravity was determined at 20°, this temperature was omitted in the list of values since the heading is given as D_4^{20}. If the specific gravity is referred to water at any temperature other than 4°, this is indicated by $D_{t_1}^{t_2}$, following the specific gravity value (t_1 and t_2 being expressed numerically).

F. *Index of Refraction*

The physical measurement of the index of refraction is the simplest and most accurate compared to the other constants studied. The value is referred to the sodium *D* line unless otherwise indicated. The changes with temperature are of the same order of magnitude as those of specific gravity. The most reliable values of the index at 20° and dn/dt were evaluated by the same method as used for specific gravity.

The index of refraction is tabulated in a manner similar to that for specific gravities. The bold face type number for each hydrocarbon is the best value at 20° derivable from all the data.

6. *Tabulated Data—Examples Illustrating Their Use.*

From the values of D_4^{20} and dD/dt, the specific gravity may be calculated for any temperature over which the equation for dD/dt is valid. If dD/dt is given as a constant over a specified range, the calculation is simple, as illustrated by the following. Calculating the specific gravity of 2-methylpentene at 0°, from the tables we find

$$D_4^{20} = 0.61996$$

$$dD/dt = -\ 0.0009679/°\text{C. (from 0° to 20°)}.$$

D_4^0 is then given by the equation

$$\begin{aligned} D_4^0 &= D_4^{20} - 0.0009679\ (0° - 20°) \\ &= 0.61996 + 0.0009679 \times 20° \\ &= 0.61996 + 0.01935 \\ &= 0.63931. \end{aligned}$$

When dD/dt is given as a linear function of the temperature, the calculation of the specific gravity at some temperature different from 20° is somewhat more extensive than the previous case. Let us consider normal nonane. From the tables we find

$$D_4^{20} = 0.71790$$

$$\frac{dD}{dt} = -\ 0.0007847\ (1 + 0.0006684\ t)/°\text{C}. \qquad (4)$$

$$\text{(from } -\ 50° \text{ to } 150°\text{)}$$

In calculating the specific gravity at 0°, the above equation shows that the value of dD/dt continuously changes. Over a small temperature range, the change dD/dt is small and a constant value may be used—namely, the average over that range. The average value of dD/dt from 0° to 20° is found by substituting in the above equation for dD/dt the temperature midway between 0° and 20°. dD/dt is then found to be $-\ 0.0007847 \times 1.006684 = -\ 0.0007899/°\text{C}$. Proceeding as in the previous example, the specific gravity at 0° is calculated to be

$$\begin{aligned} D_4^0 &= 0.71790 + 0.0007899 \times 20 \\ &= 0.7337. \end{aligned}$$

To calculate the specific gravity of normal nonane at some temperature further removed from 20°, e.g. 100°, it is no longer permissible to assume a constant value of dD/dt over the entire range from 20° to 100°, and it is therefore necessary to use equation (4), which may be rewritten as

$$dD = -\ 0.0007847\ (1 + 0.0006684\ t)\ dt.$$

Integrating dD between the limits D_4^{20} and D_4^{100} and dt between the limits 20° and 100°, we have

$$\int_{D_4^{20}}^{D_4^{100}} dD = -\int_{20}^{100} 0.0007847\ (1 + 0.0006684\ t)\ dt$$

$$\begin{aligned} \text{or, } D_4^{100} - 0.71790 &= -\Big[0.0007847\ t(1 + 0.0003342\ t)\Big]_{20}^{100} \\ &= -\ 0.0007847\ (103.342 - 20.134) \\ &= -\ 0.0007847 \times 83.208 \\ &= -\ 0.06529. \end{aligned}$$

$$\begin{aligned} \text{Hence, } D_4^{100} &= 0.71790 - 0.06529 \\ &= 0.6526. \end{aligned}$$

It should be noticed in the two foregoing examples that the calculations are carried out to one more significant figure than is retained in the final answer. This is the customary procedure in order to avoid errors due to the rounding off of numbers in the calculations.

Although the equations for dD/dt are not valid beyond the temperature limits given in each case, the invalidity does not take place abruptly at these temperatures, but rather the equation becomes less significant at temperatures deviating from the stated limits. Extrapolating a few degrees beyond the temperatures given is therefore permissible, but it is not possible to state *a priori* the magnitude of the error involved in any given case.

The index of refraction at some temperature other than 20° may be calculated from n^{20} and dn/dt in precisely the same manner as the specific gravity, illustrated by the previous examples.

There are a number of common names which do not give an indication of the structures of the hydrocarbons in this volume which is otherwise self-indexing. The common names which do not cover structures of the hydrocarbons will be indexed in the fourth volume which will also contain the common name index for the other two volumes.

II PHYSICAL CONSTANTS OF ALKANES OR PARAFFINS

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Methane	**−182.6**	**−161.58**	**0.4240_3 @ −161.58°**		$[\log_{10} p\ (\text{atm}) = -\frac{595.546}{T} + 8.09938 - 4.04175 \times 10^{-2}T + 1.68655 \times 10^{-4} T^2 - 2.51715 \times 10^{-7} T^3]$ [7]
C	−182.6 [5] −182.9 [16] −182.5 [17] −184.0 [22]	−182.5 [10] @ 83 to 85mm −178.1 [7] @ 151mm −173.1 [7] @ 262mm −168.1 [7] @ 429mm −163.1 [7] @ 670mm −163 [18] @ 751mm −161.58 [7] −161.37 [6] −160 [22] −158.1 [7] @ 1.319 atm −153.1 [7] @ 1.905 atm −148.1 [7] @ 2.670 atm −143.1 [7] @ 3.641 atm −138.1 [7] @ 4.853 atm −133.1 [7] @ 6.338 atm −128.1 [7] @ 8.132 atm −123.1 [7] @ 10.27 atm	0.4417 [7] @ −173.1° 0.4335 [7] @ −168.1° 0.4263 [7] @ −163.1° 0.4241 [7] @ −161.58° 0.4190 [7] @ −158.1° 0.4117 [7] @ −153.1° 0.4043 [7] @ −148.1° 0.3967 [7] @ −143.1° 0.3888 [7] @ −138.1° 0.3804 [7] @ −133.1° 0.3712 [7] @ −128.1° 0.3612 [7] @ −123.1° 0.3505 [7] @ −118.1° 0.3391 [7] @ −113.1°		$\frac{dD}{dt} = -0.005310 \cdot (1 + 0.004832t)$/°C. (−90° to −170°)

Name and Carbon Skeleton	M.P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Methane—(*Continued*)					
		−118.1 [7] @ 12.79 atm	0.3279 [7] @ −108.1°		
		−113.1 [7] @ 15.74 atm	0.3137 [7] @ −103.1°		
		−108.1 [7] @ 19.14 atm	0.2988 [7] @ −98.1°		
		−103.1 [7] @ 23.05 atm	0.2812 [7] @ −93.1°		
		−98.1 [7] @ 27.49 atm	0.2573 [7] @ −88.1°		
		−93.1 [7] @ 32.51 atm	0.1613 [7] @ −82.1° crit. temp.		
		−88.1 [7] @ 38.15 atm			
		−82.1 [7] @ 45.79 atm crit. pres.			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Ethane	**−172.0**	**−88.5**	**0.5462₄ @ −88.5°**		$\frac{dD}{dt} = -0.001298$/°C. (−70° to −105°)
C–C	−172.0 [1] −172.1 [22]	−110 [10] @ 200 to 215mm −100.8 [1] @ 364.5mm −95.5 [1] @ 504.0mm −90.6 [1] @ 664.5mm −88.0 [13] @ 743mm −88.4 [1] @ 753.0mm −88.63 [3] −84.1 [22] −88.3 [1,12] −79.7 [1] @1177.0mm −74.1 [1] @1547.0mm −72.7 [1] @1654.5mm	0.5272 [1] @ −74.0° 0.5338 [1] @ −78.8° 0.5392 [1] @ −83.1° 0.5458 [1] @ −88.1° 0.5459 [1] @ −88.6° 0.5469 [15] @ −88.3° 0.5472 [1] @ −89.05° 0.5549 [1] @ −95.3° 0.5589 [1] @ −98.2° 0.5608 [1] @ −99.7° 0.5685 [1] @ −105.8° 0.5719 [1] @ −108.2°		

Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Propane	**−187.1**	**−42.2**	**0.5824_4 @ −42.2°**	**1.3397_6 @ −42.2°**	$\frac{dD}{dt} = -0.001151/°C.$ (−25° to 80°)
C–C–C	−189.9 [1] −187.8 [8] −187.1 [2] 187.8 [22]	−78.5 [10] @ 100 to 110mm −44.5 [1] −42.6 to − 43.6 [9] −42.2 [11] −42.17 [2] −44.1 [22]	0.5829 [1] @ −42.2° 0.5957 [1] @ −53.3° 0.6238 [1] @ −78.2°	1 3395 [4] @ −42.2° 1.3448 [4] @ −50.0° 1.3587 [4] @ −70.0°	$\frac{dn}{dt} = -.0006753/°C.$ (−45° to −65°)

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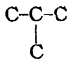
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Butane	**−135.0**	**−0.5**	**0.5788$_7$**	**1.3562 @ −15.0°**	$\frac{dn}{dt}=-0.00059$/°C. (−15° to −25°)
C-C-C-C	−135.0 [3] −135.0 [9]	−13 [5] @ 490 to 460mm −1.5 to 0 [7] −0.6 [6] −0.5 [1] −0.3 [8] +0.3 [9] +0.5 [4]	0.5791 [1] 0.6017 [1] @ −0.5°	1.3562 [2] @−15.0° 1.3621 [2] @−25.0°	

Name and Carbon Skeleton	M. P.,°C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2-Methylpropane		**−12.2**	**0.5592_8**		$\frac{dn}{dt} = -0.00062$/°C. (−25° to −45°)
Isobutane	−145.0 [3]	−10.2 [1]	0.5530 [1] @ 25.3°	1.3514 [2] @ −25.0°	
		−9.5 to −11.5 [7]	0.5591 [1] @ 20.2°	1.3638 [2] @ −45.0°	
		−12.2 [6]	0.5682 [1] @ 12.5°		
		−13.0 [4]	0.5691 [1] @ 11.7°		
			0.5729 [1] @ 8.5°		
			0.5787 [1] @ 4.3°		
			0.5821 [1] @ 0.7°		
			0.5845 [1] @ −1.3°		
			0.5857 [1] @ −2.7°		
			0.5893 [1] @ −5.5°		
			0.5899 [1] @ −6.2°		
			0.5924 [1] @ −8.5°		
			0.5927 [1] @ −11.2°		
			0.5980 [1] @ −13.6°		
			0.6005 [1] @ −15.8°		
			0.6055 [1] @ −20.7°		
			0.6131 [1] @ −27.8°		

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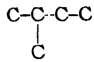
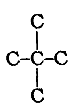
Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
n-Pentane	**−129.7**	**36.08**	**0.62638 @ 20°** **0.64529 @ 0°**	**1.35768**	$\frac{dD}{dt} = -0.0009293 \cdot (1+0.000867t)$/°C. (10° to −90°) $\frac{dD}{dt} = -0.0009686$/°C. (10° to 30°) $\frac{dn}{dt} = -0.0005473$/°C. (−25° to 25°)
C–C–C–C–C	−129.93 [2] −129.73 [1] −129.7 [4] −129.1 [2]	36.00 [4] 36.06 [3] 36.0 [25] 36.10 [2] 36.2 [8] 36.25 [17] 36.3 [19,23] 36.65 [22] 36.75 [18] 36.8 [27] 37 [28] 38 [29] 36.077 [37]	0.6163 [16] @ 30° 0.62783 [8] 0.627 [26] 0.62624 [4] 0.62606 [35] 0.6309 [17] $D_{15.5}^{20}$ 0.625 [22] @ 18° 0.6270 [29] @ 17° 0.63114 [2] @ 15° 0.6340 [17] $D_{15.5}^{14}$ 0.6309 [18] $D_{15.5}^{15.5}$ 0.6359 [16] @ 10° 0.6454 [19] @ 0° 0.6545 [16] @ −10° 0.6728 [16] @ −30° 0.6908 [16] @ −50° 0.7083 [16] @ −70° 0.7257 [16] @ −90°	1.35470 [3] @ 25° 1.35495 [4] @ 25° 1.35828 [8] 1.35769 [4] 1.35801 [16] 1.3589 [22] @ 18° 1.3570 [29] @ 18° 1.3818 [22] @ −25°	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C.* @ 760mm	D_4^{20}	n_D^{20}	*Additional Data*
2-Methylbutane	**−159.6**	**27.95**	**0.61996**	**1.35796 @ 15°**	$\frac{dD}{dt} = -0.0009679$/°C. (0° to 20°)
isopentane	−159.6[30]	29.7[27] @ 763mm	0.61972[4]	1.35796[14] @ 15°	
	−159.6[14]	27.95[10]	0.6197[13]	1.3598[11,12]	
	−159.65[36]	27.95[9]	0.6198[30]	1.35485[33]	
	−160.0[6]	27.95[14]	0.621[7] @ 19.1°		
	−160.5[24]	27.8[31]	0.6214[17] @ 20°		
	−160.6[31]	28[19,23,30]	0.6234[17] @ 17°		
		28.0[7,24]	0.62470[14] @ 15°		
		28.05[18]	0.6243[18] @ 15°		
		30.55[17]	0.6250[27] @ 14.7°		
		27[20] @ 725mm	0.6393[10] @ 0°		
			0.6394[23] @ 0°		
			0.63942[9] @ 0°		
			0.63945[14] @ 0°		
2,2-Dimethylpropane	**−16.63**	**9.45**	**0.613 @ 0°**	**1.3513 @ 0°**	$\frac{dn}{dt} = -0.00062$/°C. (0° to 6°)
neopentane	−19.5[5,30]	8.9 to 9.1[25]	0.613[5] @ 0°	1.3513[30]	
	−16.63[34]	9.4[5]	0.613[30] @ 20°	1.3513[5] @ 0°	
		9.6[30]		1.3476[5] @ 6°	
		9.45[34]			

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Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_{4}	n^{20}_{D}	Additional Data
n-Hexane	**−94.0**	**68.8**	**0.65942**	**1.37506**	$\frac{dD}{dt} = -0.0008790 \cdot (1+0.000764t)$/°C. (−90° to 50°)
C–C–C–C–C–C	−94.03 [14]	68.3 [24]	0.6318 [15] @ 50°	1.37224 [4] @ 25°	$\frac{dn}{dt} = 0.0005598$/°C. (15° to 25°)
	−94.5 [25]	68.6 to 68.7 [26]	0.65055 [8] @ 30°	1.37230 [5] @ 25°	
	−94.6 [2]	68.70 [4]	0.6507 [15] @ 30°	1.3840 [20] @ 25°	
	−95.0 [32]	68.71 [5]	0.65502 [5] @ 25°	1.3840 [17] @ 25°	
	−95.1 [8]	68.74 to 68.78 [1]	0.6583 [3]	1.37490 [15]	
	−95.34 [4]	68.80 [8]	0.6590 [28]	1.37499 [43]	
	−95.39 [5]	68.8 [9,17]	0.6592 [24]	1.37506 [5]	
	−95.4 [33]	68.95 [6,20]	0.65928 [36]	1.37508 [9]	
		69 [33]	0.65945 [5]	1.3751 [33]	
		69.2 [23]	0.6595 [7]	1.37515 [24]	
		70.5 [29]	0.660 [27]	1.37518 [3]	
		50.0 [9] @ 568.0mm	0.6600 [9]	1.3752 [1]	
		57.7 [17] @ 525.8mm	0.6610 [17,20]	1.3851 [17,20]	
		40.0 [9] @ 400.6mm	0.6630 [29] @ 17°	1.37787 [8] @ 15°	
		46.7 [17] @ 355.1mm	0.6692 [15] @ 10°		
		30.0 [9] @ 275.7mm	0.67713 [13] @ 0°		
		35.7 [17] @ 233.53mm	0.67704 [8] @ 0°		
		20.0 [9] @ 186.1mm	0.6869 [15] @ −10°		
		24.8 [17] @ 149.19mm	0.7037 [15] @ −30°		
		14.0 [17] @ 92.30mm	0.7206 [15] @ −50°		
			0.7370 [15] @ −70°		
			0.7533 [15] @ −90°		

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2-Methylpentane	**−153.7**	**60.20**	**0.6562_3**	**1.37149**	$\frac{dD}{dt} = -0.0008985/°C.$ (0° to 20°)
C–C–C–C–C | C (methyl on second carbon)	−143 [33] −153.71 [36] −154.0 [34]	60.15 to 60.20 [10] 60.19 [34] 60.2 [6,18] 60.20 [12] 60.22 to 60.26 [1] 60.27 [45] 60.3 [33,43] 61.15 [20] 61.5 to 62 [32] 62.05 [21,22]	0.6519 [3] 0.6525 [33] 0.6527 [34] 0.65316 [43] 0.6532 [1] 0.6542 [6] 0.6594 [20] 0.6614 [18] @ 17° 0.6583 [18] @ 15° 0.6580 [10] @ 15° 0.6576 [42] @ 15° 0.6711 [18] @ 0° 0.6712 [10] @ 0°	1.3684 [34] @ 25° 1.3711 [34] 1.3714 or 6 [33,44] 1.37170 [3] 1.3717 [7] 1.3718 [1] 1.372 [36] 1.374 [35] 1.37445 [7] @ 15° 1.3740 [31] @ 15°	$\frac{dn}{dt} = -0.0008099/°C.$ (15° to 25°)
3-Methylpentane		**63.2**	**0.66409**	**1.3765**	$\frac{dD}{dt} = -0.0008995/°C.$ (0° to 20°)
C–C–C–C–C | C (methyl on third carbon)	−118 [33,35]	62.7 [3] 63.16 to 63.21 [1] 63.2 [10,12,18,33,34] 63.3 [35]	0.6614 [3] 0.6638 [33] 0.6640 [34] 0.6642 [1] 0.6643 [10] 0.6647 [6] 0.665 [35] 0.6690 [34] @ 15° 0.6690 [18] @ 15° 0.6687 [10] @ 15° 0.6820 [10] @ 0° 0.6819 [18] @ 0°	1.3738 [34] @ 25° 1.376 [35] 1.37639 [3] 1.3764 [34] 1.3775 [1] 1.37929 [7] @ 15° 1.3790 [34] @ 15°	$\frac{dn}{dt} = -0.0005433/°C.$ (15° to 25°)

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2,2-Dimethylbutane	**−98.2** −98.2 [11,19]	**49.7** 49.7 to 49.75 [11] 49.7 [6,18,19,33] 49.5 to 50.5 [16] 49.80 to 49.82 [1] 52.5 [3]	**0.6494$_4$** 0.6482 [33] 0.6491 [11] 0.6493 [1] 0.6498 [6] 0.6512 [16] 0.6518 [3] 0.6538 [11] @ 15° 0.6541 [18] @ 15° 0.6678 [11] @ 0° 0.6677 [18] @ 0°	**1.36887** 1.3675 [16] 1.3688 [33] 1.36887 [35] 1.3692 [1] 1.37054 [3] 1.37158 [7] @ 15°	$\frac{dD}{dt} = -0.0009150$/°C. (0° to 20°) $\frac{dn}{dt} = -0.0005414$/°C. (15° to 20°)

2,3-Dimethylbutane
 	
C-C-C-C
  | |
  C C
	−128.8
	
	−128.6 [43]
	−129.0 [3]
	−132.7 [36]
	−134.9 [1]
	−135 [35]
	−135.1 [10]
		58.0
		
		57.82 to 58.02 [1]
		57.93 [34]
		58.0 [35]
		58.02 [36]
		58.05 to 58.08 [10]
		58.06 [12]
		58.1 [6,18,43]
		58.2 [3]
			0.6620$_1$
			
			0.6591 [3]
			0.6612 [1]
			0.6615 [34]
			0.66166 [43]
			0.6617 [33]
			0.6618 [6]
			0.668 [35]
			0.6659 [10] @ 15°
			0.6665 [34] @ 15°
			0.6662 [18] @ 15°
			0.6794 [18] @ 0°
			0.6795 [10] @ 0°
				1.37499
				
				1.3722 [34] @ 25°
				1.37471 [3]
				1.3750 [1,33,34]
				1.37509 [35]
				1.3783 [36]
				1.3776 [34] @ 15°
				1.38092 [7] @ 15°
					$\frac{dD}{dt} = -0.0008692$/°C. (0° to 20°)
					
					$\frac{dn}{dt} = -0.0005400$/°C. (15° to 25°)

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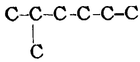
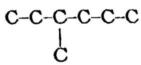
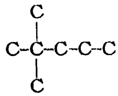
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_{4}	n^{20}_{D}	Additional Data
n-Heptane C-C-C-C-C-C-C	**−90.5** −90 [2] −90.0 [6] −90.5 [3,13] −90.6 [15,37] −90.62 [4,57] −90.65 [10] −90.9 [25] −90.9 [8,33]	**98.4** 98.1 [1,11] 98.15 [18] 98.0 to 98.2 [18] @ 762mm 98.35 [2] 98.365 [51] 98.38 [4,10] 98.39 [35] 98.4 [1,3,6,32,37,56,57] 98.45 [26] 98.52 [49] 98.57 [22] 98.65 [17] 98.6 [15] 98.4 [13] 86.6 [15] @ 525.8mm 79.5 [13] @ 419.7mm 74.8 [15] @ 355.1mm 70.0 [13] @ 301.4mm 69.5 [13] @ 297.8mm 63.9 [15] @233.53mm 61.2 [13] @ 220.0mm 51.2 [13] @ 150.0mm 51.2 [15] @149.19mm 50.0 [13] @ 141.1mm 39.5 [15] @92.30mm 38.4 [13] @ 86.0mm	**0.68375** 0.6208 [5] @ 90° 0.6210 [12] @ 90° 0.6300 [5] @ 80° 0.6392 [5] @ 70° 0.6395 [12] @ 70° 0.6483 [5] @ 60° 0.6575 [5] @ 50° 0.6577 [12] @ 50° 0.6667 [5] @ 40° 0.66623 [23] @ 40° 0.6755 [5,12] @ 30° 0.67522 [2] @ 30° 0.67955 [35] @ 25° 0.67963 [10] @ 25° 0.6838 [5] 0.68288 [23] 0.6830 [32] 0.6835 [34] 0.6836 [3] 0.68378 [10] 0.6838 [13,22] 0.6839 [24] 0.684 [28] 0.6842 [56] 0.68480 [11] 0.6881 [15,17]	**1.38774** 1.38510 [4] @ 25° 1.38553 [10] @ 25° 1.4058 [15,17] @25° 1.3870 [32] 1.3872 [24] 1.3874 [1,4] 1.38746 [22] 1.38767 [13] 1.38774 [13] 1.38775 [7,10,56] 1.38777 [3,5,12] 1.38939 [11] 1.3895 [23] 1.4068 [15,17] 1.39002 [2] @ 15° 1.4141 [52] @ −25°	$\frac{dD}{dt} = -0.0008411 \cdot (1+0.0009019t)$/°C. (−90° to 90°) $\frac{dn}{dt} = -0.00014$/°C. (15° to 25°)

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
***n*-Heptane** (*Continued*)		30.3 [13] @ 58.8mm	0.6847 [1] D_{20}^{20}		
		30.0 [13] @ 58.2mm	0.68785 [2] @ 15°		
		22.7 [13] @ 41.4mm	0.6879 [18,20] @ 15°		
			0.6921 [5] @ 10°		
			0.6927 [12] @ 10°		
			0.7004 [5] @ 0°		
			0.7088 [5] @ −10°		
			0.7092 [12] @ −10°		
			0.7170 [5] @ −20°		
			0.7252 [5] @ −30°		
			0.7256 [12] @ −30°		
			0.7337 [5] @ −40°		
			0.7420 [5,12] @ −50°		
			0.7501 [5] @ −60°		
			0.7587 [5] @ −70°		
			0.7752 [5] @ −90°		
			0.7738 [12] @ −90°		

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2-Methylhexane	**−118.2**	**89.7**	**0.6787_3**	**1.3851**	$\frac{dD}{dt} = -0.00109$/°C. (15° to 20°)
	−118.2 [34] −119.1 [3,25,33]	89.67 [54] 89.7 to 89.8 [32] 90.0 [3] 90.1 [34] 90.10 [56] 90.5 [18,20]	0.6782 [34] 0.6786 [32] 0.6789 [3] 0.6792 [54] 0.6842 [18,20] @ 15°	1.38498 [56] 1.3850 [32] 1.38509 [3,5] 1.3852 [34,37]	
3-Methylhexane		**91.8**	**0.6900**	**1.38873**	$\frac{dD}{dt} = -0.000176$/°C. (15° to 20°)
	−119.4 [6]	89.3 to 89.4 [32] 91.8 [3,6,7,34] 90.5 [6] 98 to 99 [14] @ 748mm	0.6868 [16] 0.687 [3] 0.6957 [32] 0.6909 [16] @ 15° 0.684 [14] @ 19°	1.3884 [16] @20.4° 1.3885 [14] 1.3887 [16,34] 1.38873 [3,5] 1.3933 [37] 1.3893 [14] @ 19°	
***d*-3-Methylhexane**		92 [27]	0.6876 [27]	1.3878 [27]	$[\alpha]_D^{23} = +3.67°$ [9]
***l*-3-Methylhexane**					$[\alpha]_D^{21} = -7.75°$ [8]

Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
3-Ethylpentane		**93.3**	**0.6986_0**		$\frac{dD}{dt} = -0.0008682 \cdot (1+0.000826t)$/°C. (−110° to 90°) $= -0.0008825$/°C. (10° to 30°)

C-C-C-C-C
     |
    C-C
	−118.8 [33,34]	93.3 [3,34]
		95 to 98 [19]
		94.0 [21] @ 773mm
			0.6340 [5] @ 90°
			0.6442 [5] @ 80°
			0.6540 [5] @ 70°
			0.6634 [5] @ 60°
			0.6724 [5] @ 50°
			0.6812 [5] @ 40°
			0.6900 [5] @ 30°
			0.6964 [21] @ 22.25°
			0.6984 [3,34]
			0.6988 [5]
			0.7075 [5] @ 10°
			0.7160 [5] @ 0°
			0.7251 [5] @ −10°
			0.7335 [5] @ −20°
			0.7419 [5] @ −30°
			0.7499 [5] @ −40°
			0.7582 [5] @ −50°
			0.7666 [5] @ −60°
			0.7749 [5] @ −70°
			0.7831 [5] @ −80°
			0.7912 [5] @ −90°
			0.7995 [5] @ −100°
			0.8079 [5] @ −110°
				1.39366 [3,5]
				1.3937 [34]
				1.3940 [21] @ 18.7°
				1.4014 [21] @ 3.6°	

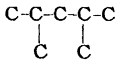
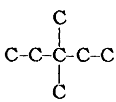
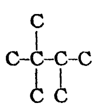
Name and Carbon Skeleton	*M. P.,°C*	*B. P.,°C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2,2-Dimethylpentane	**−125.0**	**78.9**	**0.6736_8**	**1.3823_5**	$\frac{dD}{dt} = -0.0008517/°C.$ (−120° to 80°)
	−125.0 [1,14]	78.8 [12]	0.6215 [5] @ 80°	1.3820 [8] @ 20.5°	
	−137 [8]	78.9 [1]	0.6301 [5] @ 70°	1.3822 [12,15]	
		79.3 [8]	0.6390 [5] @ 60°	1.38233 [1,2]	
		80.81 [6]	0.6477 [5] @ 50°	1.3828 [6]	
			0.6564 [5] @ 40°		
			0.6652 [5] @ 30°		
			0.6734 [15,34]		
			0.6737 [1,3]		
			0.6738 [2,5,8]		
			0.67388 [3]		
			0.6780 [8] @ 15°		
			0.6823 [5] @ 10°		
			0.6908 [5] @ 0°		
			0.6993 [5] @ −10°		
			0.7077 [5] @ −20°		
			0.7162 [5] @ −30°		
			0.7249 [5] @ −40°		
			0.7333 [5] @ −50°		
			0.7418 [5] @ −60°		
			0.7502 [5] @ −70°		

Name and Carbon Skeleton	*M. P.,°C*	*B. P., °C.* @ 760mm	D_4^{20}	n_D^{20}	*Additional Data*
2,2-Dimethylpentane (*Continued*)			0.7588 [5] @ −80° 0.7670 [5] @ −90° 0.7757 [5] @ −100° 0.7841 [5] @ −110° 0.7926 [5] @ −120°		
2,3-Dimethylpentane		**89.7**	**0.6944_9**	**1.39200**	$\frac{dD}{dt} = -0.0008685/°C.$ (0° to 20°)

C-C-C-C-C
   | |
   C C
	Solidifies to a glass at low temperatures	89.7 [1]
		89.8 [15]
		90.0 [7]
		91.6 to 91.7 [13]
			0.6888 [13]
			0.6944 [15]
			0.6950 [7]
			0.6952 [1,3]
			0.6991 [7]
			@ 15°
			0.7117 [7]
			@ 0°
				1.3918 [7,42]
				1.39201 [1,2,3,5]
				1.3921 [15]	

***l*-2,3-Dimethylpentane**					$[\alpha]_D^{21} = -9.44°$ [40]

C-C-C-C-C
   | |
   C C					

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2,4-Dimethylpentane 	**−119.3** −119.2[4] −119.4[7,8] −120.6[14] −123.4[1]	**80.8** 78.9 to 80[11] 80.5[8] 80.8[1,4] 80.8[7]	**0.6729_5** 0.6723[15,34] 0.67275[56] 0.6731[7,8,42,43] 0.6742[11] 0.6745[1,3] 0.6769[7,8] @ 15° 0.6899[7] @ 0°	**1.38240** 1.3814[7,8] 13853[56] 1.3820[15,37] 1.38233[1,2,5,38] 1.38256[11,46]	$\frac{dD}{dt} = -0.0008433$/°C. (0° to 20°)
3,3-Dimethylpentane 	**−134.9** −134.9[14,33] −135.0[1,3,37]	**86.0** 85.9 to 86.0[12] 86.0[1,3] 86.1[34] 86.10[37] 86 to 86.5[6]	**0.6931_6** 0.6920[15,34] 0.6926[12,47] 0.69330[56] 0.6934[1,3] 0.6952[41]	**1.3910_2** 1.39079[56] 1.3908[6,41] 1.3910[12,47] 1.3911[15,37] 1.39114[1,2,3,5,38]	
2,2,3-Trimethylbutane 	**−25.0** −25[9] −25.0[1,3,10,15,44,45] −25.4[14,33] −26.3[37]	**80.8** 80.75[3,9,10,44,45,48] 80.9[1,3,15] 81.0[37] 81.00[56]	**0.6901_4** 0.6898[15,34] 0.6900[1,3] 0.6905[44,48] 0.6945[3,9] @ 15° 0.7065[3,9,44,48] @ 0°	**1.38943** 1.38940[1,2,3,5,38] 1.38954[56] 1.3899[15,37] 1.3923[9] @ 15°	$\frac{dD}{dt} = -0.0008195$/°C. (0° to 20°)

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Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_4	n^{20}_D	*Additional Data*
n-Octane	**−56.8**	**125.6**	**0.70283**	**1.39764**	$\frac{dD}{dt} = -0.0008096 \cdot (1+0.000857t)$/°C. (−50° to +110°)
C-C-C-C-C-C-C-C	−57.5 [29] −57 [5] −56.9 [2,44] −56.82 [1] −56.8 [46]	123.5 [84] 124 to 126 [34] 124.3 [24,26] 124.5 [27] 125 [30,35,36] 125 to 125.6 [20] 125 to 127 [32] 125.3 to 126 [72] 125.4 [81] 125.59 [1,2] 125.6 [30,44] 125.76 [44] 125.8 [4,5,28,43,73] 111.7 [24] @ 525.8mm 99.2 [24] @ 355.1mm 86.6 [24] @ 233.53mm 74.2 [24] @ 149.19mm 61.8 [24] @ 92.30mm	0.6257 [22] @ 110° 0.6437 [22] @ 90° 0.6610 [22] @ 70° 0.6781 [22] @ 50° 0.6945 [22] @ 30° 0.69430 [5] @ 30° 0.69882 [2] @ 25° 0.6987 [34] @ 25° 0.7058 [32] 0.6984 [13] 0.702 [33] 0.70232 [5] 0.7025 [73] 0.7026 [81] 0.70279 [2] 0.70280 [44] 0.70347 [84] 0.7038 [34] 0.7044 [40] 0.7046 [20] 0.7134 [15] 0.7123 [14] D^{15}_{15} 0.7083 [36] @ 12° 0.7114 [22] @ 10° 0.71042 [10] @ 10° 0.7185 [73] @ 0°	1.38567 [2] @ 45.3° 1.3975 [37] @ 25° 1.4037 [24,66] @ 25° 1.39534 [2] @ 25° 1.3961 [40] 1.39750 [72] 1.39755 [22] 1.39760 [2] 1.39770 [44] 1.3979 [46] 1.39883 [20] 1.4059 [24] 1.40007 [5] @ 15° 1.4007 [84] @ 15.1°	$\frac{dD}{dt} = -0.0008268$/°C. (10° to 30°) $\frac{dn}{dt} = -0.0004732$/°C. (15° to 50°)

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
n-Octane—(*Continued*)			0.7192 [80] @ 0° 0.7275 [22] @ −10° 0.7432 [22] @ −30° 0.7588 [22] @ −50°		
2-Methylheptane		**117.2**	**0.6978**	**1.3947**	$\frac{dD}{dt} = -0.000952/°C.$ (15° to 20°)

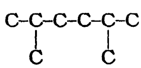
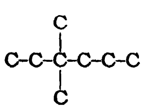
C-C-C-C-C-C-C
   |
   C
	−111.3 [75]	116 [11]
		@ 761mm
		116 [27]
		117.2 [75]
		118 [15]
		117.4 [13]
		@ 759mm
			0.6971 [75]
			0.6984 [13,44]
			0.7131 [15]
			0.7035 [14]
			D_{15}^{15}
			0.7025 [13]
			@ 15°
				1.3919 [75]
				1.3935 [13]
				1.39531 [44]
				1.3987 [15]	

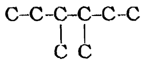
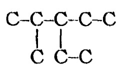
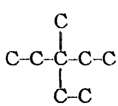
3-Methylheptane		**119**	**0.7057$_8$**	**1.3983**	$\frac{dD}{dt} = -0.0008022/°C.$ (0° to 20°)

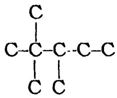
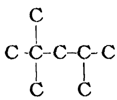
C-C-C-C-C-C-C
     |
     C
	Glassy at low temperatures [46]	117.5 to 119.5 [8]
		118.95 to 119.05 [7]
		119.05 [44]
		119.1 [46]
		123 to 124 [9]
		@ 750mm
			0.7045 [43]
			0.70584 [44]
			0.7059 [46]
			0.702 [9]
			@ 19°
			0.7095 [7]
			@ 15°
			0.7219 [7]
			@ 0°
				1.4022 [12]
				@ 25°
				1.4011 [7]
				@ 25°
				1.398 [46]
				1.3980 [26]
				1.39829 [43]
				1.3986 [9]
				@ 19°	

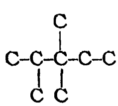
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_{4}	n^{21}_{D}	Additional Data
d-3-Methylheptane					$[\alpha]^{22}_{D} = +4.45°$ [11,12]
					$[\alpha]^{22}_{D} = +3.15°$ [12]
		116 to 118 [12]	0.710 [12] @ 22°		
l-3-Methylheptane					$[M]^{25}_{D} = -11.4°$ [70]
		115 [70]			
4-Methylheptane		**118.0**	**0.7163**	**1.39814**	$\frac{dD}{dt} = -0.0005/°C.$ (20° to 25°)
C–C–C–C–C–C–C | C		117 to 119 [6]	0.7036 [43]	1.3978 [18] @ 25°	
		117.5 [23]	0.7165 [6,16,26]	1.40063 [6,26] @ 25°	
		117.9 to 118.1 [26]	0.7166 [26] $D^{20}_{15.5}$	1.39814 [43]	
		118 [18,44]	0.7217 [18] @ 15°	1.4039 [16]	
3-Ethylhexane		**118.9**	**0.7122**	**1.4020**	$\frac{dD}{dt} = -0.00094/°C.$ (15° to 20°)
C–C–C–C–C–C | C–C		118.8 to 119 [58] @ 766mm	0.7121 [66]	1.3993 [55] @ 25°	
		118.6 [66]	0.7124 [43]	1.40128 [43]	
		118.8 to 119 [64]	0.7127 [74]	1.4023 [66]	
		118.9 [74]	0.7175 [55] D^{15}_{15}		

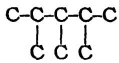
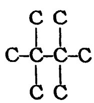
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2,2-Dimethylhexane C C-C-C-C-C-C C		**107.0** 106 to 107 [10] 106.8 to 107.1 [38]	**0.6956** 0.6953 [38] 0.6967 [10]	**1.3930** 1.3930 [38] 1.3931 [10]	
2,3-Dimethylhexane C-C-C-C-C-C C C	Glassy at low temperatures [46]	**115.7** 115.7 [44] 113.8 to 114 [16] @758mm	**0.71240** 0.71234 [44] 0.7139 [43] 0.72416 [16] D_{15}^{15} 0.7252 [16] @ 15°	**1.40117** 1.4075 [16] @ 25° 1.40069 [43] 1.40136 [44] 1.4015 [46]	$\frac{dD}{dt} = -0.00226$/°C. (15° to 20°)
***l*-2,3-Dimethylhexane** C-C-C-C-C-C C C		113 to 114 [39]			$[\alpha]_D^{25} = -0.92°$ [39]
2,4-Dimethylhexane C-C-C-C-C-C C C		**109** 109.8 to 110 [19] @ 762mm 108.4 to 110 [45]	**0.6993** 0.6993 [43] 0.698 [9] @ 19° 0.7083 [19] D_{15}^{15}	**1.39582** 1.3986 [19] @ 25° 1.3950 [45] 1.39584 [43] 1.3963 [9] @ 19°	

Name and Carbon Skeleton	*M. P., °C.*	*B .P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
d-2,4-Dimethylhexane		111 to 112 [31]	0.696 [31] @ 30°		$[\alpha]_D^{30} = +2.99°$ [31]
l-2,4-Dimethylhexane		110 to 111 [11]	0.703 [11] @ 21°		$[\alpha]_D^{21} = -10.85°$ [11]
2,5-Dimethylhexane	**−90.7**	**109.3**	**0.6949_9**	**1.39295**	$\frac{dD}{dt} = -0.0007350$/°C. (0° to 30°)
Diisobutyl 	−94.0 [46] −90.7 [3]	108.4 [27] 108.5 to 109.5 [20] 109.2 [21,73] 109.25 [44] 109.3 [46] 109.4 [3] 110 [35] @765mm 106.5 to 108 [42] @ 750mm	0.6622 [27] @ 61.2° 0.68851 [3] @ 30° 0.69378 [3] 0.6943 [16] 0.6951 [21] 0.6970 [43] 0.70198 [3] @ 10° 0.71020 [3, 73] @ 0°	1.39288 [43] 1.39297 [3] 1.3930 [46] 1.3932 [21] 1.39501 [20] @ 15° 1.3954 [21] @ 15°	$\frac{dn}{dt} = -0.00041$/°C. (15° to 20°)
3,3-Dimethylhexane		**111**	**0.7086**	**1.3993**	
		110.7 to 111.2 [38] 111.0 to 112 [10]	0.7078 [38] 0.7116 [10]	1.3992 [38] 1.3998 [10]	

Name and Carbon Skeleton	*M. P.,°C*	*B. P., °C. @ 760mm*	D^{20}_4	n^{20}_D	*Additional Data*
3,4-Dimethylhexane		**117.8**	**0.7195_1**	**1.4045**	
	Glassy at low tempera-tures [46]	115 to 116 [20] 116 to 117 [8] 117.8 [66] 117.85 [44] 118.7 [58] 116 to 116.2 [56] @ 750 mm	0.7165 [56] 0.7193 [66] 0.71951 [44] 0.7216 [43]	1.4038 [56] @ 25.2° 1.4036 [44] 1.4044 [66] 1.40470 [43]	
2-Methyl-3-ethyl-pentane		**114**	**0.7182**	**1.4033**	
		114 [57,66]	0.7030 [66] 0.7182 [43] 0.7084 [57] @ 15°	1.3996 [57] @ 25° 1.4026 [66] 1.40353 [43]	
3-Methyl-3-ethyl-pentane		**118.4**	**0.7256**	**1.4081**	
	−90.9 [46]	118.35 [44] 118.4 [46] 118.5 [66] 118.5 to 118.9 @ 750mm [9]	0.7242 [44] 0.7270 [66] 0.713 [9] @ 19°	1.4081 [46,66] 1.4026 [9] @ 19°	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C.* @ 760mm	D^{20}_{4}	n^{20}_{D}	*Additional Data*
2,2,3-Trimethylpentane		**110.3**	**0.7162**	**1.4032**	
	Glassy at low temperatures [46]	110 [65] 110.05 [44] 110.2 [48] 110.3 [66] 110.8 to 111.4 @ 765mm [61]	0.71613 [44] 0.7162 [66] 0.7173 [48] 0.721 [65] @ 15.5°	1.4030 [48] 1.40302 [44] 1.4032 [46] 1.4033 [66] 1.4056 [65]	
2,2,4-Trimethylpentane	**−107.45**	**99.3**	**0.69194**	**1.39157**	$\frac{dD}{dt} = -0.0008299 \cdot (1+0.000736t)$/°C. (−100° to 100°) $= -0.0008421$/°C. (10° to 30°)
	−107.8 [29] −107.7 [59] −107.6 [67] −107.41 [47] −107.4 [66] −107.45 [85]	99.2 [79] 99.234 [78] 99.3 [48,49,59,66] 99.25 to 99.35 [82] 99.3 [85]	0.6206 [52] @ 100° 0.6303 [52] @ 90° 0.6402 [52] @ 80° 0.6498 [52] @ 70° 0.6587 [52] @ 60° 0.6680 [79] @ 50° 0.6676 [52] @ 50° 0.6756 [52] @ 40° 0.6837 [52] @ 30° 0.6918 [48,52] 0.6919 [82] 0.69196 [44] 0.6920 [66] 0.6914 [49] D^{20}_{20} 0.6998 [52] @ 10°	1.3912 [59] 1.3915 [66] 1.39151 [44] 1.3916 [48] 1.39162 [82] 1.39163 [52] 1.3917 [79] 1.3921 [49] 1.3916 [85]	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C.* @ 760mm	D_4^{20}	n_D^{20}	*Additional Data*
2,2,4-Trimethylpentane (*Continued*)			0.7078 [52] @ 0°		
			0.7160 [52] @ −10°		
			0.7242 [52] @ −20°		
			0.7326 [52] @ −30°		
			0.7407 [52] @ −40°		
			0.7488 [52] @ −50°		
			0.7569 [52] @ −60°		
			0.7652 [52] @ −70°		
			0.7733 [52] @ −80°		
			0.7814 [52] @ −90°		
			0.7897 [52] @ −100°		
2,3,3-Trimethylpentane		**114.2**	**0.7258**	**1.4075**	
	−109.3 [44]	113.6 [48]	0.7257 [44]	1.4074 [48]	
		114.8 [44]	0.7258 [48]	1.4076 [44]	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
2,3,4-Trimethylpentane		**113.4**	**0.7195**	**1.4046**	
	Glassy at low temperatures [44]	112.8 [48] 114.0 [44]	0.7192 [44] 0.7197 [48]	1.4045 [48] 1.4047 [44]	
2,2,3,3-Tetramethyl-butane	**101**	**106.5**			
	100.7 to 101.4 [60] 101 [50] 101.5 [46] 103.5 [53] 104 [51,83]	106.5 [53,66] 106.8 [83]	0.7219 [77] (Extra-polated, liquid)		

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Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
***n*-Nonane**	**−53.69**	**150.71**	**0.71790**	**1.40562**	$\frac{dD}{dt} = -0.0007847 \cdot (1+0.000668t)$/°C. (−50° to 150°) = −0.0007952/°C. (10° to 30°)
C-C-C-C-C-C-C-C-C	−53.7 [22] −53.70 [3] −53.68 [4]	150.20 to 150.90 [10] 150.4 to 150.6 [2] 150.5 to 150.7 [11] 150.55 [38] 150.7 [22] 150.71 [4] 150.72 [3] 150 to 151.5 [43]	0.6096 [9] @ 150° 0.6272 [9] @ 130° 0.6445 [9] @ 110° 0.6619 [9] @ 90° 0.6776 [9] @ 70° 0.6945 [9] @ 50° 0.7105 [9] @ 30° 0.71398 [4] @ 25° 0.71770 [37] 0.7176 [38,41] 0.71780 [4] 0.71808 [40] 0.7219 [2] D_{15}^{15} 0.7260 [9] @ 10° 0.7417 [9] @ −10° 0.7573 [9] @ −30° 0.7726 [9] @ −50°	1.4025 [2] @ 25° 1.40318 [3] @ 25° 1.40340 [4] @ 25° 1.40550 [9] 1.40561 [40] 1.40563 [4] 1.4060 [22] 1.41340 [43] @ 17.2°	$\frac{dn}{dt} = -0.000468$/°C. (20° to 25°)

Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
2-Methyloctane	**−80.3**	**143.0**	**0.7121**	**1.40288**	

Isononane
C-C-C-C-C-C-C-C
  |
  C
	−80.47 to −80.51 [20]
	−80 [16]
		142.8 [16]
		143.255 [20]
			0.7107 [16]
			0.7134 [20]
				1.40285 [16]
				1.4032 [20]	

3-Methyloctane
C-C-C-C-C-C-C-C
    |
    C
	−107.95 to −108.05 [20]	144.18 [20]	0.7210 [20]	1.4065 [20]	

***d*-3-Methyloctane**		**143**	**0.723**		$[\alpha]^{23}_{D} = +5.27°$ [8]
		142.4 to 143.3 [6] 143 to 144 [8]	0.725 [8] @ 23° 0.7206 [6] @ 18°		$[\alpha]^{17}_{D} = +9.38°$ [6]
***l*-3-Methyloctane**					$[\alpha]^{27}_{D} = -8.5°$ [7]
		143 [7]	0 714 [7] @ 27°	1.4052 [7] @ 25°	

<table>
<tr><th>Name and Carbon Skeleton</th><th>M. P.,°C.</th><th>B. P., °C. @ 760mm</th><th>D^{20}_4</th><th>n^{20}_D</th><th>Additional Data</th></tr>
<tr><td>4-Methyloctane</td><td>−113.3 (?)</td><td>142.46</td><td>0.7222</td><td>1.4069</td><td></td></tr>
<tr><td>C–C–C–C–C–C–C–C
|
C</td><td>−113.28 to −113.32 [21]
−119.08 to −119.18 [20]</td><td>142.433 [20]
142.485 [21]
141.7 to 141.9 @ 771mm [23]</td><td>0.7245 [20]
0.7199 [21]
0.7320 [23] D^{15}_{15}</td><td>1.4050 [1]
1.4061 [21]
1.4078 [20]</td><td></td></tr>
<tr><td>l-4-Methyloctane</td><td></td><td>141 [7]</td><td>0.716 [7] @ 19°</td><td></td><td>$[\alpha]^{19}_D = -1.06°$ [7]</td></tr>
<tr><td>3-Ethylheptane
C–C–C–C–C–C–C
|
C–C</td><td></td><td>143.1 [16]</td><td>0.7260 [16]</td><td></td><td></td></tr>
<tr><td>4-Ethylheptane
C–C–C–C–C–C–C
|
C–C</td><td></td><td>138 to 139 [5]</td><td>0.7407 [5]</td><td>1.41564 [5]</td><td></td></tr>
</table>

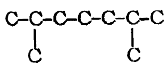
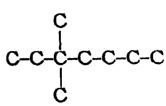
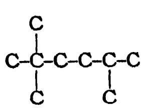
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data

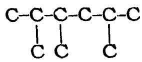
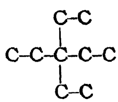
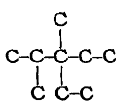
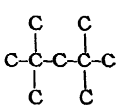
2,3-Dimethylheptane
C–C–C–C–C–C–C
   │ │
   C C
		140.6 [16]	0.7235 [16]	1.4085 [16]	

2,4-Dimethylheptane
C–C–C–C–C–C–C
   │   │
   C   C
		133
		133.0 [39]
		132.9 to 133 [25] @ 752mm
		130 [24] @ 749mm
			0.7158
			0.7158 [39]
			0.7128 [24] D_{20}^{20}
			0.7206 [25] D_{15}^{15}
				1.4023
				1.4014 [25] @ 25°
				1.4023 [24]
					$\frac{dD}{dt} = -0.00084$/°C. (15° to 20°)

***l*-2,4-Dimethylheptane**		131 to 131.5 [31]	0.733 [31] @ 22°		$[\alpha]_D^{22} = -3.51°$ [31]

2,5-Dimethylheptane
C–C–C–C–C–C–C
   │   │
   C   C
		135.8
		135.6 to 135.9 [25]
		135.8 [39]
		133 [24] @ 741mm
			0.7147
			0.7147 [24] D_{20}^{20}
			0.7190 [25] D_{15}^{15}
				1.4033
				1.4033 [24]
				1.4020 [25] @ 25°	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_4	n^{20}_D	*Additional Data*
***d*-2,5-Dimethylheptane**		**135**	**0.715**		$[\alpha]^{27}_D = +4.19°$ [32]
		133 to 137 [6]	0.713 [32] @ 27°		$[\alpha]^{22}_D = +3.33°$ [27]
		134 [32]			$[\alpha]^{16}_D = +9.48°$ [6]
		135 [27]	0.715 [27]		
			0.7154 [6] @ 16°		
2,6-Dimethylheptane		**134**	**0.7049**	**1.3974**	$\frac{dD}{dt} = -0.00127/°C.$ (0° to 20°)
		134 to 135 [29,30]	0.7018 [29,30]	1.3955 [29,30]	
		133 [26] @ 756mm	0.7129 [26]	1.4028 [26]	
			0.7209 [23] @ 11°	1.40672 [23] @ 10.5°	
		133 to 134 [23] @ 740mm			
			0.7298 [26] @ 0°		
3,3-Dimethylheptane					
		137 to 138 [28]	0.7304 [28]	1.4095 [28]	
2,2,5-Trimethylhexane		**124.09**	**0.7075₅**	**1.3966**	
	−106.35 [42]	126 [33] @ 764mm	0.70755 [42]	1.39967 [42]	
			0.7181 [33]	1.3987 [33]	
		121 to 123 [28]	0.7191 [28]	1.3997 [28]	
		124.09 [42]			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2,3,5-Trimethylhexane		**130**			
		130 [34] 129 [24] @ 738mm	0.7171 [24] D_{20}^{20}	1.4051 [24]	
3,3-Diethylpentane		**139.2**	**0.75255**		$\frac{dD}{dt} = -0.0008518 \cdot (1-0.0040t)$/°C. (15° to 40°)
	−40 to −42 [35]	139.2 [35] 138.1 [35] @ 740mm 45 to 47.5 [35] @ 19mm	0.73758 [35] @ 40° 0.74868 [35] @ 25° 0.75222 [35] 0.75651 [35] @ 15°	1.42057 [35] @ 18°	
2,3-Dimethyl-3-ethylpentane					
		141.6 [16]		1.4186 [16]	
2,2,4,4-Tetramethylpentane					
		122.3 [16]	0.7185 [16]		

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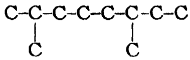
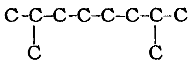
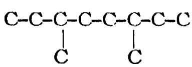
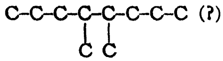
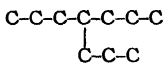
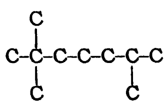
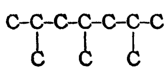
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
***n*-Decane**	**−29.72**	**174.04**	**0.72985**	**1.41205**	$\frac{dD}{dt} = -0.0007675 \cdot (1+0.00511t)$/°C. (−30° to 170°)
C–(C)$_8$–C	−30.1 [2] −29.76 [3] −29.68 [7]	170.9 to 171.7 [31] 170.9 to 171.9 [24] 171 to 172 [58] 172 to 173 [35] 172 to 175 [28] 173.70 to 173.80 [2] 174.0 [55] 174.02 [7] 174.06 [3] 169 to 170 [19] @ 742mm 100 to 102 [34] @ 17mm 98 to 101 [34] @ 17mm	0.6088 [4] @ 170° 0.6257 [4] @ 150° 0.6421 [4] @ 130° 0.6583 [4] @ 110° 0.6754 [4] @ 90° 0.6916 [4] @ 70° 0.7075 [4] @ 50° 0.7230 [4] @ 30° 0.72304 [2] @ 30° 0.72643 [3] @ 25° 0.72805 [1] 0.72994 [55] 0.73014 [3] 0.7307 [57] 0.7473 [28] 0.764 [43] @ 15.5° 0.73443 [2] @ 15° 0.73876 [2] @ 10° 0.7385 [4] @ 10° 0.74571 [2] @ 0° 0.7538 [4] @ −10° 0.7687 [4] @ −30°	1.40961 [7] @ 25° 1.40986 [3] @ 25° 1.41791 [58] @ 22.4° 1.4093 [39] 1.4117 [55] 1.41178 [7] 1.41192 [4] 1.41203 [3] 1.4124 [40] 1.4136 [28]	$\frac{dn}{dt} = -0.000430$/°C. (20° to 25°)

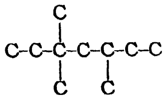
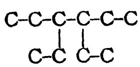
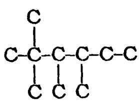
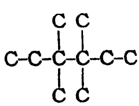
Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D^{20}_4	n^{20}_D	*Additional Data*
2-Methylnonane	**−74.64**		**0.72805**		
C-C-C-C-C-C-C-C-C | C	−74.64 [1] to −74.74	166.8 [1]	0.72805 [1] 0.764 [43] @ 15.5°	1.4099 [1]	
3-Methylnonane	**−84.83**	**167.8**	**0.73337**	**1.4125**	
C-C-C-C-C-C-C-C-C | C	−84.83 [1] to −84.89	167.8 [1] 165 to 166.5 [26] @ 751mm	0.73335 [1] 0.7354 [26]	1.4125 [1] 1.4126 [26]	
4-Methylnonane					
C-C-C-C-C-C-C-C-C | C	α, [1] −101.57 to −101.67 β, −98.9 [1] to 99.1	165.7 [1]	0.73234 [1]	1.4123 [1]	
***l*-4-Methylnonane**		**76 @ 30mm**	**0.733**		$[\alpha]^{22}_D = -0.59°$ [16] $[\alpha]^{27}_D = -1.56°$ [33]
C-C-C-C-C-C-C-C-C | C		76 @ 30mm [33] 72 @ 25mm [16]	0.726 [23] @ 27° 0.731 [16] @ 22°		

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_{4}	n^{20}_{D}	Additional Data
5-Methylnonane		**165.1**	**0.73255**	**1.4117**	
C-C-C-C-C-C-C-C-C | C (on the 5th C)	−86.77 [1] to −86.80	162 to 163 [14] 165 [27] 165.1 [1] 164 to 166 [26] @ 755mm	0.7319 [26] 0.73255 [1] 0.738 [27]	1.4116 [26] 1.4122 [1]	
2,4-Dimethyloctane					
C-C-C-C-C-C-C-C | | C C (on the 2nd and 4th C)		152.5 [6] @ 746mm	0.7259 [6] D^{20}_{20}	1.4090 [6]	
***l*-2,4-Dimethyloctane**					$[\alpha]^{24}_{D} = -2.51°$ [32]
C-C-C-C-C-C-C-C | | C C (on the 2nd and 4th C)		70 @ 40mm [32]	0.725 [32] @ 24°		
***d*-2,5-Dimethyloctane**					$[\alpha]^{28}_{D} = +1.02°$ [33] $[\alpha]^{25}_{D} = +1.09°$ [33]
C-C-C-C-C-C-C-C | | C C (on the 2nd and 5th C)		156 [33]	0.723 [33] @ 28° 0.725 [33] @ 25°		

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
2,6-Dimethyloctane		**159**	**0.7291_3**		$\frac{dD}{dt} = -0.0008527/°C.$ (0° to 20°)
		158 to 159.5[21] @ 776mm	0.7289[23] @ 20.2°	1.41103[23] @ 18.2°	
		160 to 161[21] @ 772mm	0.7286[21] 0.730[12]	1.40924[8] @ 18.1°	
		158 to 159[11,13]	0.7305[23] @ 16.7°	1.4135[13] @ 15°	
		159[25] 160 to 161[23]	0.7348[25] @ 15°	1.414[22] @ 15°	
		158 to 159[5] @ 750mm	0.7340[13] @ 15°	1.41406[25] @ 15°	
		156.5 to 158[12] @ 724mm	0.7410[5] @ 11°	1.41611[5] @ 11°	
			0.741[12] @ 0°		
***d*-2,6-Dimethyloctane**		**160**			[α] = +1.75°[20]
		160 to 161[21] @ 772mm	0.7300[21]	1.4109[21]	[α] = +6.27°[21]
		159 to 159.5[20] @ 742mm			

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2,7-Dimethyloctane	**−52.5**	**160.2**	**0.7247_1**	**1.4096**	$\frac{dD}{dt} = -0.001191$/°C. (10° to 25°)
Diisoamyl 	-52.5[10] -52.6[9]	156.5 to 157.5[29] 158.78[19] 159[42] 159.66[18] 160.0[9] 160.15 to 160.35[10] 158 to 159.5[8] @ 756mm 159.5[17] @ 751.7mm 157.1[19] @ 732.8mm	0.72402[15] 0.7248[42] 0.7270[29] D_{20}^{20} 0.72156[19] @ 22° 0.7278[8] @ 18.1° 0.7358[17] @ 9.8°	1.4006[29] 1.4096[42] 1.40924[8] @ 18.1°	
3,6-Dimethyloctane					
		159 to 160[45] 160[37]	0.7402[45] @ 15°	1.4145[45]	
***d*-3,6-Dimethyloctane**					$[\alpha]_D^{13} = +16.85°$[47]
		159.8 to 160.8[47]	0.7348[47] @ 13°		

Name and Carbon Skeleton	M. P.,°C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
4,5-Dimethyloctane (?) 		146.3 to 146.7 [50]			
4-*n*-Propylheptane 		161.7 [49]	0.740 [49] @ 15.2°	1.414 [49]	
2,2,6-Trimethylheptane		**148.93**	**0.7229**	**1.4082**	$\frac{dn}{dt} = -0.00044/°C.$ (16° to 20°)
	−105.0 [56]	148.93 [56] 150.5 to 151.5 @ 748mm [46]	0.7215 [46] 0.7238 [56] 0.7250 [46] @ 16°	1.4077 [56] 1.4090 [46] 1.4100 [46] @ 16°	
2,4,6-Trimethylheptane 		143 [44] @ 746mm	0.7210 [44] D_{20}^{20}	1.4057 [44]	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{2}_{D}	*Additional Data*
3,3,5-Trimethylheptane 		159.1 [52]	0.7553 [52]	1.4230 [52]	
3,4-Diethylhexane 		157.5 [54]	0.744 [54]	1.4184 [54]	
2,2,3,4-Tetramethyl-hexane 		156.5 [52]	0.7548 [52]	1.4224 [52]	
3,3,4,4-Tetramethyl-hexane 		150 to 156 [31]			

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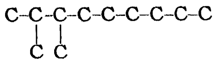
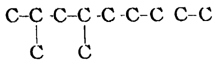
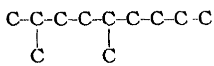
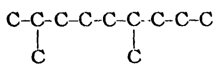
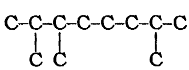
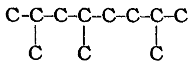
Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D^{20}_4	n^{20}_D	*Additional Data*
***n*-Undecane**	**−25.61**	**195.8**	**0.7404_5**	**1.41902**	$\frac{dD}{dt} = -0.0007061 \cdot (1+0.000617t)$/°C. (−10° to 190°)
C–(C)$_9$–C	−25.61 [6,7] −26.5 [1] −28 [18]	192 to 197 [15] 193 to 194 [28,30] 193 to 195.5 [5] 193 to 196 [17] 194 [14] 194.2 to 195.6 [9] 194.5 [26] 195.84 [7] 195 to 198 [18] 196 to 197 [3] 193 to 195 [2] @ 754mm 189 to 190 [19] @ 740mm 192 to 194 [4] @ 720mm 127.8 to 128.2 [4] @ 100mm 127 [1] @ 100mm 79 @ 16mm [20]	0.6038 [8] @ 190° 0.6224 [8] @ 170° 0.6398 [8] @ 150° 0.6563 [8] @ 130° 0.6720 [8] @ 110° 0.6816 [1] @ 99° 0.6875 [8] @ 90° 0.7027 [8] @ 70° 0.7182 [8] @ 50° 0.7333 [8] @ 30° 0.73667 [7] @ 25° 0.73995 [4] 0.74025 [7] 0.741 [5] 0.7411 [1] 0.744 [14] 0.7457 [18] 0.7581 [3] 0.7601 [28] @ 18.2° 0.7466 [2] D^{15}_{15} 0.7482 [8] @ 10° 0.7630 [8] @ −10°	1.40611 [7] @ 45.3° 1.41495 [6] @ 25° 1.4200 [18] @ 25° 1.4164 [19] @ 25° 1.4220 [15] @ 22° 1.4158 [3,14] 1.41727 [7] 1.41817 [2] 1.42440 [28] 1.4730 [8]	$\frac{dD}{dt} = -0.0007150$/°C. (10° to 30°) $\frac{dn}{dt} = -0.0005201$/°C. (20° to 45°)

<table>
<tr><th>Name and Carbon Skeleton</th><th>M. P., °C.</th><th>B. P., °C.
@ 760mm</th><th>D_4^{20}</th><th>n_D^{20}</th><th>Additional Data</th></tr>
<tr><td>n-Undecane (?)
(from coal tar)</td><td></td><td>194.5 [26]</td><td>0.7596 [28]</td><td>1.42440 [28]</td><td></td></tr>
<tr><td>l-5-Methyldecane
C–C–C–C–C–(C)$_5$–C
|
C</td><td></td><td>94 @ 30mm [10]</td><td>0.738 [10]
@ 24°</td><td></td><td>$[\alpha]_D^{24} = -0.39°$ [10]</td></tr>
<tr><td>d-4-Ethylnonane
C–C–C–C–C–C–C–C–C
|
C—C</td><td></td><td>77 @ 20mm [12]</td><td>0.745 [12]
@ 23°</td><td></td><td>$[\alpha]_D^{23} = +0.70°$ [12]</td></tr>
<tr><td>l-4-Ethylnonane</td><td></td><td>77 @ 20mm [12]</td><td>0.745 [12]
@ 23°</td><td></td><td>$[\alpha]_D^{12} = -0.50°$ [12]</td></tr>
<tr><td>5-Ethylnonane
C–C–C–C–C–C–C–C–C
|
C–C</td><td></td><td>71 @ 16mm [2]</td><td>0.7513 [2]
@ 19.2°</td><td>1.42092 [2]
@ 19.5°</td><td></td></tr>
</table>

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2,3-Dimethylnonane 		170 to 180 [1]			
***l*-2,4-Dimethylnonane** 		75 @ 25mm [4]	0.731 [4] @ 24°		$[\alpha]_D^{24} = -1.82°$ [4]
***l*-2,5-Dimethylnonane** 		109 [3] @ 100mm	0.738 [3] @ 25°		$[\alpha]_D^{25} = -0.49°$ [3]
2,6-Dimethylnonane 		173 to 176 [11] @ 745mm	0.7506 [11] @ 11°	1.4214 [11] @ 11°	
2,3,7-Trimethyloctane 		173 to 176 [11] @ 752mm	0.7637 [11] @ 10.5°	1.4270 [11] @ 10.5°	

Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C.* @ 760mm	D^{20}_{4}	n^{20}_{D}	*Additional Data*
2,4,7-Trimethyloctane 		167.5 [13] @ 746 mm	0.7344 [13] D^{20}_{20}	1.4132 [13]	

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Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Dodecane	**−9.65**	**216.2**	**0.7493**	**1.42182**	$\frac{dD}{dt} = -0.0006942 \cdot (1+0.000584t)/°C\cdot$ (−10° to 210°)
C–(C)$_{10}$–C	−12 to 13[16]	201[9]	0.5986[1] @ 210°	1.4108[3] @ 45.3°	$\frac{dD}{dt} = -0.0007023/°C.$ (10° to 30°)
	−12[6]	214[15]	0.6170[1] @ 190°	1.41952[4] @ 25°	$\frac{dn}{dt} = -0.0004400/°C.$ (20° to 45°)
	−11[5]	214 to 216[7]	0.6345[1] @ 170°	1 41967[3] @ 25°	
	−9.73[3]	214.5[6]	0.6509[1] @ 150°	1.42170[1]	
	−9.61[4]	215[16]	0.6665[1] @ 130°	1.42188[3]	
		216.23[3]	0.6820[1] @ 110°		
		212.3[16] @ 754mm	0.6930[6] @ 99.1°		
		193 to 196[10] @ 752mm	0.6974[1] @ 90°		
		145.5[6] @ 100mm	0.7125[1] @ 70°		
		50 @ 126mm[6]	0.7274[1] @ 50°		
			0.7424[1] @ 30°		
			0.74542[3] @ 25°		
			0 751[19]		
			0.7511[6,15]		
			0 7684[7,16]		
			0.7642[10] @ 10.5°		
			0.7571[1] @ 10°		
			0.7715[1] @ −10°		

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_{4}	n^{20}_{D}	Additional Data
n-Dodecane (?)					
(from rice bran tar)		95 @ 15mm [27]			
(from coal tar)		212 to 215 [28]	0.7728 [28] @ 19.5°	1.43091 [28]	
d-3-Methylundecane					

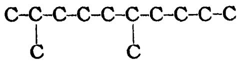
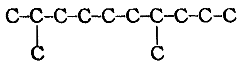
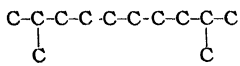
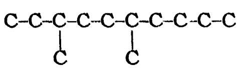
d-Methyl-ethyl-n-octyl methane
C-C-C-(C)$_8$
       |
       C
		94 @ 15mm [22]	0.7491 [22] @ 25°	1.4216 [22] @ 25°	$[\alpha]^{25}_{D}$ = +3.87° [22]
					$[M]^{25}_{D}$ = +6.59° [22]

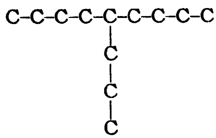
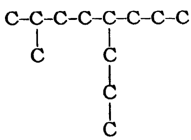
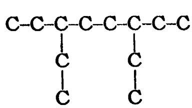
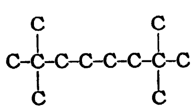
l-2,3-Dimethyldecane					$[\alpha]^{25}_{D}$ = −0.30° [23]

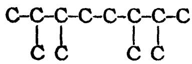
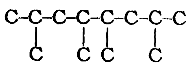
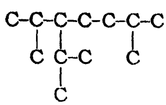
C-C-C-C-C-C-C-C-C-C
   | |
   C C
		112 [23] @ 20mm			

l-2,5-Dimethyldecane					

C-C-C-C-C-C-C-C-C-C
   | |
   C   C
		122 [25] @ 100mm	0.739 [25] @ 25°		$[\alpha]^{25}_{D}$ = −0.05° [25]

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2,6-Dimethyldecane 		193 to 196 [10] @ 752mm	0.7642 [10] @ 10.5°	1.42821 [10] @ 10.5°	
2,7-Dimethyldecane 		160 [24]			
2,9-Dimethyldecane 		78 @ 7mm [24]	0.749 [32]		
3,6-Dimethyldecane 		160 [24]			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
5-*n*-Propylnonane		**197**	**0.7559**	**1.4228**	
		204 to 205 [29] @ 763mm 195 to 196 [26] @ 740mm	0.7506 [26] @ 25° 0.7559 [29]	1.4217 [26] @ 25° 1.4228 [29]	
2-Methyl-5-*n*-propyl-octane					
		189 [11]	0.7538 [11] @ 14°	1.425 [11] @ 14°	
3,6-Diethyloctane					
		203 [31]	0.76745 [31]	1.43158 [31]	
2,2,7,7-Tetramethyl-octane					
		185 to 190 [12]			

Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C.* @ 760mm	D_4^{20}	n_D^{20}	*Additional Data*
2,3,6,7-Tetramethyl-octane 		92 @ 20 to 22mm [17]	0.7593 [17] @ 25°	1.42527 [17] @ 25°	
2,4,5,7-Tetramethyl-octane 		208 to 210 [13]			
2,6-Dimethyl-3-Iso-propylheptane 		186 to 188 [14]	0.7654 [14]	1.432 [14]	

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Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Tridecane C–(C)$_{11}$–C	**−6** −7 to −8 [9] −6 [1,8] −6.2 [1] −5.5 [11]	226 [3] 230 to 234 [11] 234 [1,5] 161 to 165 [8] @ 100mm 162.5 [1] @ 100mm 140.5 [1] @ 50mm 124 to 126 [3] @ 50mm	**0.7568** 0.7008 [1] @ 99° 0.7543 [8] 0.7571 [1,5] 0.7567 [14] 0.7834 [3] D_{20}^{20} 0.7608 [1] @ 15° 0.7713 [1] @ 0°	1.4354 [3]	$\frac{dD}{dt} = -0.0007104$/°C. (0° to 99°)
(from rice bran tar)		225 to 226 [16] 114 [10] @ 15mm			
5-Methyldodecane C–C–C–C–C–(C)$_6$–C with C on the 5th carbon		225.5 to 227 [12] @ 758mm	0.7576 [12]	1.4244 [12]	
2,5,9-Trimethyldecane C–C–C–C–C–C–C–C–C–C with C on the 2nd, 5th and 9th carbons		206 to 208 [4] @ 745mm	0.7756 [4] @ 11°	1.43362 [4] @ 11°	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C.* @ 760mm	D^{20}_{4}	n^{20}_{D}	*Additional Data*
5-*n*-Butylnonane C-C-C-C-C-C-C-C-C C-C-C-C (on C-5)		217.5 to 218.5 [7]	0.7635 [7] @ 18.5°	1.4273 [7] @ 18.5°	

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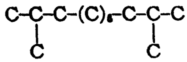
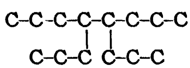
(13) H. R. Henze and C. M. Blair, J. Am. Chem. Soc. **53**, 3084, **1931.**
(14) G. Calingaert, Calc. Private Communication, **1938.**

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Tetradecane	**5.5**	**251**	**0.7636_0**		$\frac{dD}{dt} = -0.0007069$/°C. (5° to 100°)
C–(C)$_{12}$–C	4 to 4.5 [12]	250 [9]	0.7078 [1] @ 99°		
	4.5 [1]	252 [11]	0.7630 [27]		
	5 [13,18]	252.5 [1]	0.7640 [26]		
	5.4 to 5.5 [2]	245 [7] @ 750mm	0.761 [10]		
	5.5 [19]	178.5 [1] @ 100mm	0.7645 [1,6]		
	6 [7]	158 [1] @ 50mm	0.766 [16]		
		129.5 [2] @ 15mm	0.7681 [1] @ 15°		
			0.7738 [2] @ 5.4°		
n-Tetradecane (?)		**237**			
(from petroleum)		237 to 238 [8]	0.7814 [3] D_{20}^{20}	1.4360 [3]	
		236 to 238 [3]			
		142 to 143 [3] @ 50mm			
(from kerogen)		80 to 85 [21] @ 1mm	0.7820 [21] @ 25°	1.4370 [21] $n_{daylight}^{25}$	
				1.4405 $n_{daylight}^{20}$	
(from distillation of sodium stearate)		235 to 238 [20]	0.7709 [20]	1.4358 [20]	
(from rice bran tar)		99 to 101 [14] @ 3mm			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2,11-Dimethyldodecane					$\frac{dD}{dt} = -0.0006874$/°C. (0° to 100°)
	−8.5 [5]	117 @ 13mm [5]	0.7138 [5] @ 99°	1.43023 [5] @ 13.85°	
			0.7276 [5] @ 80°		
			0.7484 [5] @ 50°		
			0.7691 [5]		
			0.7751 [5] @ 10°		
			0.7820 [5] @ 0°		
4,5-Di-*n*-propyloctane		**223**			
sym-Tetra-*n*-propylethane 	Below [1] −80	220 [24] 225 [25]	0.7735 [24] @ 25°	1.4322 [24] @ 25°	

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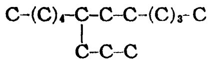
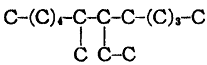
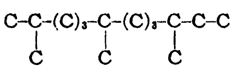
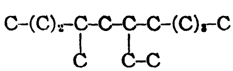
Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
***n*-Pentadecane**	**10**	**268**	**0.7688**	**1.431 @ 25°**	$\frac{dD}{dt} = -0.0006962/°C.$ (0° to 100°)
$C-(C)_{13}-C$	9.6 to 9.8[18] 10[1,9]	264 to 265[18] 270.5[1] 194[1] @ 100mm 173[1] @ 50mm 160[1] @ 30mm 144[2] @ 15mm 125 to 127[9] @ 6mm	0.7136[1] @ 99.3° 0.7615[9] D_{30}^{30} 0.7689[1] 0.772[13] 0.7924[1] @ 15° 0.7757[1] @ 10°	1.431[9] @ 25° 1.4532[6] @ 16.22°	
***n*-Pentadecane** (?)					
(from petroleum)		256 to 257[3,7] 158 to 159[3] @ 50mm	0.7896[3] D_{20}^{20}	1.4413[8]	
(from Sanna, the rhizome of Hedychium spicatum Ham.)	10[11]	143 to 148[11] @ 16mm	0.7743[11] @ 15°		
(from rice bran tar)		144[15] @ 18mm			
(from distillation of sodium stearate)		257 to 260[16]	0.7750[16]		
(from kerogen)		90 to 95[17] @ 1mm	0.7825[17] D_{25}^{25}	1.4380[17] $n_{daylight}^{25}$	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
6-Propyldodecane 		241 to 243 [20] @ 730mm	0.7729 [20] @ 18.6°	1.43321 [20] @ 18.6°	
6-Methyl-7-ethyl-dodecane 		240 to 242 [20] @ 726mm	0.7769 [20] @ 21.9°	1.43462 [20] @ 21.9°	
2,6,10-Trimethyl-dodecane Farnesane 		119.5 to 120 [8] @ 11mm	0.7682 [8] @ 25°	1.4303 [8] @ 25°	
4-Methyl-6-propyl-undecane 		235 to 236 [20] @ 727mm	0.7733 [20] @ 18.6°	1.43311 [20] @ 18.6°	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Pentadecane					
of unknown structure (from spartein) (probably 6-Propyl-dodecane or 4-Methyl-6-propylundecane)		242 [20] @ 729mm	0.7740 [20] @ 18.7°	1.43351 [20] @ 18.7°	
Pentadecane					
of unknown structure (from phytol)		260.5 to 263.5 [4] 249 to 250 [14] @ 718mm 131 to 132 [14] @ 13mm 127 to 130 [4] @ 9.5mm	0.789 [4] @ 0°	1.43322 [4]	
Octahydrosesqui-citronellene					
		115 to 117 [5] @ 9mm	0.7789 [5]	1.43518 [5]	$[\alpha]_D = \pm 0°$
Pentadecane					
of unknown structure (from Echinocea angusti-folia) C_5H_{11}-C-C-C-C-C-C_5H_{11} (amyl groups not normal)	8.7 [12]		0.7681 [12] @ 24° 0.7692 [12] @ 15°	1.423 [12] @ 25°	

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Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
***n*-Hexadecane** (Cetane) C–(C)$_{14}$–C	**18.1** 16 to 17 [14] 16.5 [21] 16.9 [34] 17.5 [7] 17.6 [20] 17.8 [21] 18 [1,2; 22,23] 18 to 20 [16] 18.10 [5,6] 18.12 [6] 18.13 [5] 19 to 20 [10] 20 [3,4] Meta-stable form 16.2 [6]	**280** 270.[3] 278 [16] 280 to 285 [24] 287.5 [1] 288.6 [27] @ 764.8mm 208.5 [1] @ 100mm 187.5 [1] @ 50mm 174 [1] @ 30mm 157.5 [8] @ 15mm 158 [27] @ 15mm 161 to 162 [7] @ 15mm 156 to 158 [14] @ 14mm 138 to 140 [24] @ 13mm 110 @ 1mm[4]	**0.7749$_9$** 0.7197 [1] @ 99° 0.7544 [34] @ 50° 0.7707 [1] @ 25° 0.7742 [1] 0.7751 [21] 0.7752 [34] 0.7754 [8] @ 18.2° 0.7754 [1] @ 18°	**1.4352** 1.4570 [17] @ 16° 1.4352 [21]	$\frac{dD}{dt} = -0.0006932/°C.$ (15° to 100°)
***n*-Hexadecane** (?) (from petroleum)		**275** 275 [12] 274 [19] 174 to 175 [12] @ 50mm 168 to 170 [23] @ 24mm 100 to 105 [29] @ 1mm	0.7835 [29] D^{25}_{25} 0.7911 [12] D^{20}_{20}	**1.4413** 1.4413 [12] 1.4379 [29] $n^{25}_{daylight}$	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
n-Hexadecane (*Continued*)					
(from rose wax)	18 [23]	169 [23] @ 24mm			
(from kerogen)		102.5 [29] @ 1mm	0.7846 [29]	1.4401 [29]	

3-Ethyltetradecane
C–C–C–(C)$_{10}$–C
       |
      C–C
			0.7829 [13] @ 14.2°	1.43921 [13] @ 14.2	

6,9-Dimethyltetra-decane
C–(C)$_4$–C–C–C–C–(C)$_4$–C
           | |
          C   C
		103 to 104 [26] @ 1.5mm	0.7787 [26]	1.4348 [26]	

7,8-Dimethyltetra-decane
C–(C)$_4$–C–C–C–C–(C)$_4$–C
               | |
              C C
	$<$-30 [32]	267.5 to 269.5 [9]
		268 to 270 [18]
		140 to 145 [18] @ 10mm
			0.7923 [9] @ 14°
			0.8022 [9] @ 0°
					$\frac{dD}{dt} = -0.00071$/°C. (0° to 15°)

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2,6,7,11-Tetramethyl-dodecane					

C–C–(C)$_3$–C–C–(C)$_3$–C–C
    | | | |
    C   C C   C
		103 to 108 [33]
		@ 3mm			

4,7-Di-*n*-propyldecane			**0.7846**	**1.4376**	

C–C–C–C–C–C–C–(C)$_3$
         | |
      (C)$_3$ (C)$_3$
		125 to 127 [11]
		@ 18mm
		92 to 93 [26]
		@ 1.5mm
			0.7841 [26]
			0.7887 [11]
				1.4368 [26]
				1.4450 [11]	

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Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
n-Heptadecane	**22.0**	**303**	**0.7767 @ 22°**	**1.4360 @ 25°**	$\frac{dD}{dt} = -0.000681$/°C. (22° to 100°)
C–(C)$_{15}$–C	20 to 21[18] 20.5 to 22.5[12] 21[18] 21.8[23] 21.92[17] 21.97[17] 22[1,14,16] 22.5[2,4] 23[8,19]	288 to 289[5,10] 303[2] 290 to 292[13] @ 738mm 223[2] @ 100mm 180 to 189[5] @ 50mm 201.5[2] @ 50mm 186 to 189[4] @ 30mm 187.5[2] @ 30mm 170[2] @ 155mm 170[12] @ 13mm 158 to 163[9] @ 10mm 81 @ 0mm[3]	0.7245[2] @ 99° 0.7379[15] @ 80.85° 0.7714[2] @ 30° 0.7749[2] @ 25° 0.77554[22] @ 22.5° 0.7777[4] @ 22.5° 0.7767[1,2] @ 22.5° 0.7766[4] @ 22.5° 0.7764[2] @ 22.5° 0.7805[4] D^{16}_{16}	1.4357[19] @ 36.5° 1.4360[13] @ 25° 1.43583[7] @ 23.7°	
n-Heptadecane (?)					
(from sardine oil)	22 to 22.5[11]				
(from petroleum)		288 to 289[5] 188 to 189[5] @ 50mm	**0.7986** 0.8000[5] D^{20}_{20}		
(from sardine oil)		288 to 289[10]			

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C.* @ 760mm	D_4^{20}	n_D^{20}	*Additional Data*
n-Heptadecane (*Continued*)					
(from kerogen)		115 to 120 [20] @ 1mm	0.7839 [20] D_{25}^{25}	1.4377 [20] $n_{daylight}^{25}$	
5,5-Di-n-butyloctane					
Tetra-n-butylmethane C-C-C-C | C-C-C-C-C-C-C-C-C | C-C-C-C		94 to 95.5 [18] @ 12mm	0.7679 [18] @ 23.3° 0.7685 [18] @ 21.9	1.43472 [18] @ 23.3 1.43532 [18] @ 21.9	
Heptadecane					
of unknown structure (from phytol)		161.5 [6] @ 15mm	0.794 [6] @ 0°	1.43763 [6]	

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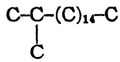
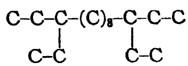
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
n-Octadecane	**28.0**	**308**	**0.7767 @ 28°**	**1.4367 @ 28°**	$\frac{dD}{dt} = -0.0006744$/°C. (25° to 100°)
C-(C)$_{16}$-C	Stable form 25 [8] 27 [28,29,30] 27 to 28 [23] 27.3 [2] 27.5 [1] 27.82 [2] 27.90 [1] 27.9 [22] 28 [3,5,7,9,14,27] 28 to 29 [26] 28.01 [1] 29.9 [15] 30 [6] Meta-stable form 27.4 [22] 27.6 [1]	305 to 307 [6] 308 [30] 312 to 313 [16] 317 [3] 236 [3] @ 100mm 214.5 [3] @ 50mm 180 to 183 [29] @ 15mm 181.5 [1,9] @ 15mm 177 [5] @ 15mm 155 to 160 [30] @ 5mm 157 to 158 [28] @ 3mm	0.7288 [3] @ 99° 0.7409 [17] @ 81.2° 0.7411 [17] @ 80.95° 0.7756 [8] @ 42° 0.7685 [3] @ 40° 0.7719 [3] @ 35° 0.7720 [17] @ 35.2° 0.7790 [8] @ 32° 0.7754 [3] @ 30° 0.7766 [9] @ 28° 0.7768 [28] @ 28°	1.4344 [8] @ 32° 1.4367 [28] @ 28°	
n-Octadecane (?)					
(from petroleum)	20 [10]	300 to 301 [10] 199 to 200.5 [10] @ 50mm	0.7830 [10] D_{20}^{20}	1.440 [10]	
(from petroleum wax)	27.0 [11]		0.7347 [11] @ 84°	1.4133 [11] @ 84°	
(from kerogen)		125 to 130 [31] @ 1mm	0.7916 [31] @ 25°	1.4423 [31] $n_{daylight}^{25}$	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C.* @ 760mm	D_4^{20}	n_D^{20}	*Additional Data*
2-Methylheptadecane					
	5 [12]	311 [12] 231.5 [12] @ 100mm 178.5 [12] @ 15mm 103 [12] @ 8mm	0.7836 [13] @ 15.6° 0.7838 [12] @ 15°	1.44038 [13] @ 15.6° 1.43942 [12] @ 13°	
3,12-Diethyltetra-decane					$\frac{dD}{dt} = -0.000675/°C.$
	About −30 [34]	170 to 171 [34] @ 18mm 159 [34] @ 4mm 151 @ 2mm [34]	0.7924 [34]	1.4473 [34] @15.2°	
Pristane		**293**		**1.4412**	
(from fish oils)	−11 [24]	296 [25] 292 [20] 220 [25] @ 100mm 187 [25] @ 30mm 167 to 170 [24] @ 15mm 158 [25] @ 10mm	0.7885 [20]	1.4395 [33] 1.4412 [20] 1.4419 [24] @ 15°	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Octadecanes					
of unknown structure (from Lichen islandicus)		190 to 200 [18]			
(from liver oil)		85 to 86 [21] @ vacuum			

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(8) M. V. Dover and W. A. Hensley, Ind. Eng. Chem. **27**, 337, **1935**.
(9) F. Krafft, Ber. **19**, 2218, **1886**.
(10) C. F. Mabery, Am. Chem. J. **28**, 177, **1902**.
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(13) J. F. Eykman, Verhandelingen Haarlem [3] **8**, 441, **1919**.
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(17) J. F. Eykman, Rec. trav. chim. **15**, 52, **1896**.
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(25) Yoshiyuki Toyama, Fettchem. Umschau **30**, 181, **1923**.
(26) I. M. Heilbron and W. M. Owens, J. Chem. Soc. **1928**, 942.
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(34) S. Landa and M. Habada, Collection Czechoslovak. Chem. Commun. **8**, 473-6, **1936**.

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
***n*-Nonadecane**	**32**	**330**	**0.7776_7 @ 32°**		$\frac{dD}{dt} = -0.0006668/°C.$ (30° to 100°)
C–$(C)_{17}$–C	30 to 31 [3] 31 [13] 31.5 to 32.5 [12] 31.8 to 32 [4] 32 [2,7,9,16] 33 [18]	330 [2] 320 [3] @ 750mm 248 [2] @ 100mm 226.5 [2] @ 50mm 109 @ 0mm [4] 111 @ 0mm [2]	0.7323 [2] @ 99.3° 0.7451 [10] @ 81.9° 0.7720 [2] @ 40° 0.7754 [2] @ 35° 0.7766 [10] @ 34.6° 0.7774 [2] @ 32°	1.4335 [16] @ 38° 1.4340 [16] @ 36°	
***n*-Nonadecane** (?)					
(from petroleum)	33 to 34 [5] 31.4 [6]	316 [8] 210 to 212 [5] @ 50mm	0.7397 [6] @ 84°	1.4155 [6] @ 84°	
(from coal tar)	33 [15]	328 [15] @ 770mm			
(from kerogen)	27.1 [17]	135 to 140 [17] @ 1mm	0.7833 [17] D_{40}^{40}	1.4356 [17] $n_{daylight}^{40}$	
7-Isopropylhexadecane					
C–$(C)_5$–C–$(C)_8$–C with C–C–C branch on the 7th C		175 to 185 [11] @ 10mm			

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
Nonadecane					
of unknown structure (from sardine oil)	−5 [14]	148 to 150 [14] @ 4mm			

(1) F. Krafft and H. Weilandt, Ber. **29,** 1323, **1896.**
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(12) R. Schaal. Ber. **40,** 4784, **1907.**
(13) A. Müller, Proc. Roy. Soc. (London) A **127,** 417, **1930.**
(14) Sei-ichi Ueno and Rüchiro Yamasaki, J. Soc. Chem. Ind., Japan **33,** Suppl. 451B, **1930.**
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(16) D. Vorländer and W. Selke, Z. physik. Chem. **129,** 435, **1927.**
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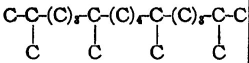
(18) H. R. Henze and C. M. Blair, J. Am. Chem. Soc. **53,** 3084, **1931.**

Name and Carbon Skeleton	*M. P.*, °C.	*B. P.*, °C. @ 760mm	D_4^{20}	n_D^{20}	*Additional Data*
n-Eicosane	**36.4**	**309.7**	**0.7777₆ @ 36.4°**	**1.4307 @ 50°**	$\frac{dD}{dt} = -0.0006759/°C.$ (36.4° to 100°)
C–(C)$_{18}$–C	35 to 35.6 [4] 36.4 [7] 36.4 [10,21,22,23] 36.3 to 36.6 [6] 36.7 [1,5] 37 [11,13,25] 38 [3,20,24]	309.7 [13] 205 [1,5,20] @ 15mm 148 [3] @ 0.6mm 60 [4] @ 0.0001mm	0.7110 [26] @ 136° 0.7363 [1] @ 99.2° 0.7417 [7] @ 84° 0.7487 [1] @ 80.2° 0.7499 [14] @ 79.3° 0.7502 [14] @ 78.9° 0.7721 [14] @ 45.6° 0.7738 [14] @ 43.1° 0.7741 [14] @ 42.9° 0.7762 [26] @ 38.3° 0.7775 [6] @ 36.7° 0.7776 [5] @ 36.7° 0.7779 [1] @ 36.7°	1.4325 [25] @ 46.8° 1.4312 [25] @ 47.3° 1.4173 [7] @ 84°	$\frac{dn}{dt} = -0.0003939/°C.$ (45° to 85°)
n-Eicosane (?)					
(from kerogen) (from rose wax)	32.2 [32] 36.5 [29]	220 [29] @30mm 145 to 150 [32] @ 1mm	0.7787 [32] @ 40°	1.4370 [32] $n^{40}_{daylight}$	

Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2-Methylnonadecane					
C-C-(C)$_{16}$-C C	18.3 [9]		0.7876 [9] @ 18.1°	1.44229 [9] @ 18.1°	
9-Methylnonadecane					
C-(C)$_7$-C-(C)$_9$-C C		200 [16] @ 14mm			
3-Ethyloctadecane			**0.7948$_8$**	**1.44632** **@ 15°**	$\frac{dD}{dt} = -0.0006609/°C.$ (0° to 100°)
C-C-C-(C)$_{14}$-C C-C	−3 [8]	341 [8] 204 [8] @ 15mm 202 [8] @ 12mm	0.7428 [8] @ 99° 0.7487 [8] @ 90° 0.7553 [8] @ 80° 0.7617 [8] @ 70° 0.7684 [8] @ 60° 0.7750 [8] @ 50° 0.7817 [8] @ 40° 0.7886 [8] @ 30° 0.7951 [8] 0.7959 [9] @ 15.5° 0.8018 [8] @ 10° 0.8091 [8] @ 0°	1.4476 [8] @ 10.6° 1.44618 [9] @ 15.5°	$\frac{dn}{dt} = -0.000290/°C.$ (10° to 16°)

Name and Carbon Skeleton	*M. P., °C*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2,6,11,15-Tetramethylhexadecane, "Di-tetrahydrogeranyl" 		171.8 to 172.6 @ 11mm [19]	0.7853 [19] @ 25°	1.4382 [19] @ 25°	
Crocetane Probably 2,6,11,15-Tetramethylhexadecane		135 [15] @ 0.5mm	0.8027 [15] @ 19.8°	1.44937 [15] @ 19.8°	
Phytane Probably Tetramethylhexadecane		169.5 [17] @ 9.5mm; 170.5 to 170.7 @ 9.6mm [18]; 169.5 [18] @ 9.5mm	0.803 [17,18] @ 0°		
Eicosane of unknown structure (from spinach)	67.5 to 68.5 [30]; 69 [31]				

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(6) F. Krafft, Ber. **40,** 4779, **1907.**
(7) C. C. Buchler and G. D. Graves, Ind. Eng. Chem. **19,** 718, **1927.**
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(9) J. F. Eykman, Verhandelingen Haarlem [3] **8,** 441, **1919.**
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(11) A. Müller and W. B. Saville, J. Chem. Soc. **127,** 599, **1925.**
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(29) H. Prophète, Compt. rend. **183,** 609, **1926.**
(30) F. W. Heyl, E. C. Wise and J. H. Speer, J. Biol. Chem. **82,** 111, **1929.**
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(32) J. W. McKinney, J. Am. Chem. Soc. **46,** 968, **1924.**

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Heneicosane	**40.4**		**0.7782_0 @ 40.4**		$\frac{dD}{dt} = -0.0006562/°C.$ (40.4° to 100°
C–(C)$_{19}$–C	39.9 to 40.2 [7] 40 [12] 40.3 to 40.5 [16] 40.4 [1,3,18] 40.5 [8] 41 [6]	215 @ 15mm [1] 172 to 172.5 [16] @ 2.5mm	0.7400 [1] @ 98.9° 0.7522 [11] @ 80.9° 0.7557 [1] @ 74.7° 0.7585 [18] @ 70° 0.7729 [11] @ 49.5° 0.7778 [7] @ M.P. 0.7783 [1] @ 40.4°	1.4240 [18] @ 70°	
n-Heneicosane (?)					
(from kerogen)	36.8 [15]	155 to 160 [15] @ 1mm	0.7777 [15] @ 50°	1.4363 [15] @ 50°	
(from coal)	39 [13]				
(from rose wax)	40.5 [10]	222 to 223 [10] @ 24mm			
(from petroleum)	40.4 [14] 40.5 [4] 40.8 [5]	215 [14] @ 15mm 230 to 231 [4] @ 50mm 340 to 345 [9]	0.7458 [5] @ 84°	1.4191 [5] @ 84°	

(1) F. Krafft, Ber. **15**, 1718, **1882.**
(2) F. Krafft and H. Weilandt, Ber. **29**, 1323, **1896.**
(3) S. Landa and R. Riedl, Collection Czechoslovak. Chem. Commun. **2**, 520, **1930.**
(4) C. F. Mabery, Am. Chem. J. **28**, 185, **1902.**
(5) C. C. Buchler and G. D. Graves, Ind. Eng. Chem. **19**, 718, **1927.**
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(7) F. Krafft, Ber. **40**, 4779, **1907.**
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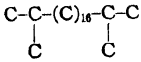
(15) J. W. McKinney, J. Am. Chem. Soc. **46**, 968, **1924.**
(16) J. Strating and H. J. Backer, Rec. trav. chim. **55**, 903, **1936.**
(17) D. Perry, J. Am. Chem. Soc. **54**, 2918-2920, **1932.**
(18) D. S. McKittrick, H. J. Henriques, and H. S. Wolff, J. Inst. Petr. Tech. **23**, 630, **1937.**

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
n-Docosane C–(C)$_{20}$–C	**44.4** 43.8 [7] 44 [5,15,16] 44.0 to 44.5 [4] 44.4 [1,8] 44.5 [1,12,18] 47 [3]	327 [18] @ 768mm 242 @ 50mm [5] 224.5 [1,8] @ 15mm 230 [12] @ 15mm	**0.7778$_4$ @ 44.4°** 0.7422 [1] @ 99.2° 0.7548 [9] @ 80.9° 0.7549 [1] @ 79.6° 0.7560 [9] @ 78.85° 0.7665 [5] @ 60° 0.7769 [9] @ 46.7° 0.7782 [1] @ 44.4° 0.7776 [4] @ M. P. 0.7778 [10] @ M. P.	**1.43321 H_α 44.4°** **1.44181 H_β 44.4°** 1.42015 [9] $n_{H\alpha}^{80.9}$ 1.42749 [9] $n_{H\beta}^{80.9}$ 1.42084 [9] $n_{H\alpha}^{78.85}$ 1.42818 [9] $^{78.85}_{H\beta}$ 1.43332 [9] $n_{H\alpha}^{46.7}$ 1.44091 [9] $n_{H\beta}^{46.7}$	$\frac{dD}{dt} = -0.0006466$/°C. (44.4° to 100°) $\frac{dn_{H\alpha}}{dt} =$ −0.0003864/°C (45° to 85°) $\frac{dn_{H\beta}}{dt} =$ −0.0003939/°C. (45° to 85°)
n-Docosane (?)					
(from kerogen)	40.0 [19]	165 to 170 [19] @ 1mm	0.7844 [19] @ 50°	1.4400 [19] $n_{daylight}^{50}$	
(from coal)	42.3 to 43.5 [17] 43 [13]	224 to 225 [17] @ 15mm			
(from rose wax)	44.5 [11]	245 to 248 [11] @ 30mm			

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2,19-Dimethyleicosane					$\frac{dD}{dt} = -0.0006530/°C.$ (41° to 90°)
	41[6]		0.7496[6] @ 90° 0.7561[6] @ 80° 0.7626[6] @ 70° 0.7691[6] @ 60° 0.7757[6] @ 50° 0.7816[6] @ 41°		
4-*n*-Propylnonadecane			**0.7971_6**		$\frac{dD}{dt} = -0.0006726/°C.$ (0° to 100°)
	6.5[14]	210 to 211[14] @ 10mm	0.7441[19] @ 99° 0.8039[19] @ 30° 0.7968[14] @ 20° 0.8109[14] @ 0°	1.44855[14] @ 14.0°	

(1) F. Krafft, Ber. **15,** 1718, **1882.**
(2) F. Krafft and H. Weilandt, Ber. **29,** 1323, **1896.**
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(7) W. E. Garner, Katherine Van Bibber, and Annie M. King, J. Chem. Soc. **1931,** 1533.
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(15) A. Muller, Proc. Roy. Soc. (London) A **138,** 514, **1932.**
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(18) G. M. Robinson, J. Chem. Soc. **125,** 226, **1924.**
(19) J. W. McKinney, J. Am. Chem. Soc. **46,** 986, **1924.**
(20) D. Perry, J. Am. Chem. Soc. **54,** 2918-20, **1932.**

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Tricosane	**47.4**		**0.7797_1** **@ 47.4°**	**1.43470** **H_α 47.4°** **1.44228** **H_β 47.4°**	$\frac{dD}{dt} = -0.0006619/°C.$ (47.4° to 100°) $\frac{dn_{H\alpha}}{dn} =$ $-0.0003859/°C.$ (48° to 85°) $\frac{dn_{H\beta}}{dt} =$ $-0.0003936/°C.$ (48° to 85°)
C–(C)$_{21}$–C	46 [13,17] 47 [7] 46.9 to 47.4 [19] 47.2 to 47.5 [5] 47.7 [1]	320.7 [8] 234 @ 15mm [1] 190 to 191 [19] @ 1.5mm 142.5 [2] @ 0mm	0.7456 [1] @ 98.8° 0.7570 [1] @ 80.8° 0.7577 [10] @ 8.16° 0.7785 [1] @ 47.7° liq. 0.7788 [10] @ 48.95° 0.7799 [5] @ M. P.	1.43410 [10] $n_{H\alpha}^{48.95}$ 1.42150 [10] $n_{H\alpha}^{81.6}$ 1.44167 [10] $n_{H\beta}^{48.95}$ 1.42882 [10] $n_{H\beta}^{81.6}$	
n-Tricosane (?)					
(from kerogen)	44.1 [16]	175 to 180 [16] @ 1mm	0.7858 [16] @ 50°	1.4410 [16] $n_{daylight}^{50}$	
(from petroleum)	45 [3] 47.1 [4] 48 [6,9]	258 to 260 [3] @ 50mm 256 to 258 [6] @ 40mm 234 @ 15mm [9]	0.7513 [4] @ 84° 0.7587 [6] @ 80° 0.7641 [6] @ 70° 0.7765 [3] @ 60° 0.7705 [6] @ 60°	1.4217 [4] @ 84°	
(from coal tar)	46 [17]				
(from coal)	47 [14]	234 to 235 [14] @ 15mm			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Tricosane *(Continued)*					
(from fossil wax)	47 [15]	247 [15] @ 34mm			
(from rose wax)	48 [11]	254 to 255 [11] @ 30mm			
(from oil of geranium)	49.5 [12]				

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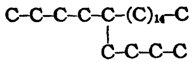
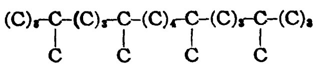
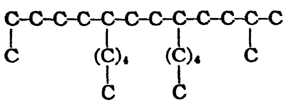
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Tetracosane	**51.1**		**0.7786₃ @ 51.1°**	**1.43026 @ 65°**	$\frac{dD}{dt} = -0.0006380/°C.$ (51.1° to 100°)
C–(C)$_{22}$–C	49.5 [4] (sinters)	324.1 [12]	0.7481 [2] @ 98.9°	1.43026 [4] @ 65°	$\frac{dn}{dt} = -0.000385/°C.$ (65° to 80°)
	51 [11,15]	237 to 240 [1,3] @ 15mm	0.7628 [2] @ 76°	1.42448 [4] @ 80°	
	51.1 [2]	243 @15mm [2]	0.7786 [2] @ 51.1° liq.		
	51.2 [20]	243 to 244 [4] @ 15mm			
	54 [3,16]	241 [15] @ 12mm			
	55 [1]				
n-Tetracosane (?) (from olive oil)	45 to 46 [28]				

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_4	n^{20}_D	Additional Data
n-Tetracosane (?)—(*Continued*)					
(from petroleum)	48 [5] 49.4 [7] 50 to 51 [6] 50.9 to 51.1 [25]	272 to 274 [6] @ 50mm 272 to 274 [5] @ 30mm 243 [25] @ 15mm	0.7526 [7] @ 84° 0.7653 [5] @ 80° 0.7718 [5] @ 70° 0.7770 [5] @ 60° 0.7768 [6] @ 60°	1.4226 [7] @ 84°	
(from coal)	49.2 to 50.8 [21] 51 [17] 50.7 to 51.3 [8]	242 to 243 [21] @ 15mm			
(from kerogen	48.4 [23]	185 to 190 [23] @ 1mm	0.7740 [23] @ 60°	1.4370 [23] @ 60°	
(from fossil wax)	51 [22]	250 [22] @ 22.5mm			
(from brown coal tar)	52 [24]				
(from paraffin)		250 @ 15mm [18]			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_{4}	n^{20}_{D}	Additional Data
2-Methyltricosane	**42°**		**0.7881_4**		$\frac{dD}{dt} = -0.0006444$/°C. (42° to 100°)
C–C–$(C)_{20}$–C (C on second carbon)	42 [9] 37.7 [29] 38.0 to 38.5 [27]	207.5 to 208 [27] @ 3mm	0.7508 [9] @ 100° 0.7662 [29] @ 70° 0.7827 [9] @ 50° 0.7882 [9] @ 42°	1.4279 [29] @ 70°	
"Isotetracosane"					
(structure unknown)	51 to 51.5 [1,10]	222 to 225 [10] @ 9mm			
2,2-Dimethyldocosane					
C–C(C)(C)–$(C)_{19}$–C	34.55 to 34.75 [27]	191 to 191.5 @ 4mm [27]			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
5-*n*-Butyleicosane			0.8012		$\frac{dD}{dt} = -0.0006985 \cdot (1-0.00119t)$/°C. (0° to 100°)
	8 [19]	222 to 223 [19] @ 10mm	0.7499 [19] @ 99° 0.8012 [19] 0.8080 [19] @ 10° 0.8150 [19] @ 0°		
4,8,13,17-Tetramethyleicosane					
Bixane 		162 [14] @ 0.51mm	0.8054 [14]	1.4502 [14]	
1,11-Dimethyl-5,8-diisoamyldodecane					
		162 [30] @ 0.1mm	0.8000 [30] @ 21°		

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Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
n-Pentacosane	**53.3**				
C–(C)$_{23}$–C	53.3 [8,13,26] 55.5 to 56 [6]	259 [16] @ 15mm			
n-Pentacosane (?)					
(from kerogen)	52.3 [21]	195 to 200 [21] @ 1mm	0.7774 [21] @ 60°	1.4380 [21] @ 60°	
(from coal tar)	52.6 to 53.4 [20] 53.5 to 54 [5]	254 [5,20] @ 15mm		1.43202 [5] @ 65° 1.42624 [5] @ 80°	
(from brown coal)	53.8 to 54 [2]		0.7785 [2] @ M. P.		
(from paraffin wax)	53.3 [10] 53.4 [17]				
(from birch bark)	53 to 54 [18]				
(from petroleum)	53.3 [1] 53.2 to 53.4 [24] 53 to 54 [4] 54 [3,22] 54.3 to 54.8 [9]	282 to 284 [3] @ 40mm 280 to 282 [4] @ 50mm	0.7582 [3] @ 90° 0.7558 [1] @ 84° 0.7648 [3] @ 80° 0.7706 [3] @ 70° 0.7778 [3] @ 60°	1.4244 [1] @ 84°	
(from tachardiacerin)	54 to 55 [14]				

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
n-Pentacosane (?) (*Continued*)					
(from Utah crude tar)	54 [15]				
(from beeswax)	54 to 54.5 [19]				
Isopentacosane					
(from cerebronic acid) (structure unknown)	56 [23]				
Pentacosanes					
of unknown structure	49 to 51 [11]				
	53 to 54 [7,12]				

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Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Hexacosane	**57**		**0.7573_8 @ 90°**		$\frac{dD}{dt} = -0.0006490$/°C. (90° to 160°)
C–(C)$_{24}$–C	56.1 [11] 56.4 to 56.6 [13] 56.5 [6,10] 56.6 [1] 56.8 to 57 [2] 57 [17] 58.0 [16] 59 to 60 [5]	262 @ 15mm [6] 199 [5] @ 0.4mm	0.7130 [17] @ 158.3° 0.7190 [17] @ 149 2° 0.7305 [17] @ 131.1° 0.7370 [17] @ 121.8° 0.7440 [17] @ 111° 0.7495 [17] @ 102.2° 0.7560 [17] @ 91.7° 0.7787 [2] @ M. P.	1.42815 [6] @ 80° 1.42774 [6] @ 80° 1.43353 [6] @ 65° 1.43332 [6] @ 65°	
n-Hexacosane (?)					
(from olive oil)	51.8 [24]				
(from kerogen)	54.9 [20]	205 to 210 [20] @ 1mm	0.7815 [20] @ 60°	1.4408 [20] $n^{60}_{daylight}$	
(from fossil wax)	55 to 56 [19]	280 [19] @ 32mm			
(from coal)	55.2 to 56.2 [18]	262 to 263 [18] @ 15mm			
(from rose wax)	56 [12]	272 to 275 [12] @ 30mm			
(from supa·oil)	56.4 to 56.6 [16]				

Name and Carbon Skeleton	*M. P.,°C.*	*B .P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
n-Hexacosane (?) (*Continued*)					
(from petroleum)	55 to 56 [3] 56.4 [7] 55.7 [7] 56.7 [22] 58 [8] 73 [9]	292 to 294 [8] @ 50mm 294 to 296 [3] @ 40mm 265 to 270 [9] @ 30mm 258 to 260 [22] @ 15mm	0.7606 [3] @ 90° 0.7580 [7] @ 84° 0.7719 [8] @ 80° 0.7671 [3] @ 80° 0.7779 [8] @ 70° 0.7742 [3] @ 70° 0.7843 [8] @ 60° 0.7805 [3] @ 60°	1.4257 [7] 1.4255 [7]	
(from coal tar)	57.5 [21]				
(from a plant)	64 [23]				
(from paraffin)		268 [14] @ 15mm			
Cerane					
(from ceryl alcohol)	61 [5]	207 [5] @ 0.7mm			
13-Methylpentacosane					
Methyldilaurylmethane $C-(C)_{11}-\underset{\displaystyle C}{\underset{\vert}{C}}-(C)_{11}-C$	28.8 to 29 [26] 29 [27]		0.7720 [27] @ 70°	1.4308 [27] @ 70°	

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Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Heptacosane	**60**		**0.7776 @ 60°**		$\frac{dD}{dt} = -0.0006151$/°C. (60° to 100°)
C-(C)$_{25}$-C	59 [6] 59 to 59.1 [16] 59.4 [3] 59.5 [1,5,6,9] 60.5 [20] 61 [18]	270 [1,6] @ 15mm 269 to 270 [6] @ 15mm	0.7528 [6] @ 100° 0.7545 [1] @ 99° 0.7730 [6] @ 65° 0.7796 [1] @ 59.5° liq. 0.7789 [3] @ M. P. liquid 0.9169 [6] @ 25° solid	1.42874 [6] @ 80° 1.43453 [6] @ 65° 1.43442 [6] @ 65°	$\frac{dn}{dt} = -0.000383$/°C. (65° to 80°)
n-Heptacosane (?)					
(from oil of cloves)	53 to 54 [21]				
(from coal)	57.3 to 59 [23]	268 to 270 [23] @ 15mm			
(from a plant)	58 to 59 [12]				
(from apples)	59.0 to 59.1 [17]				
(from beeswax)	59.2 59.5 [22]				
(from carnauba wax)	59 to 59.5 [14]				
(from petroleum)	57.9 [7] 59.1 [7]		0.7609 [7] @ 84° 0.7600 [7] @ 84°	1.4269 [7] @ 84° 1.4263 [7] @ 84°	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Heptacosane (?) (*Continued*)					
(from rose wax)	59.5 [11]				
(from Ghedda wax)	59 to 59.5 [24]				
(from crude oil)	60.5 to 60.8 [10]				
(from Utah crude tar)	60 [15]				
(from Chinese wax)	61 to 62 [8]				
(from sugar beet)	61.5 to 63.5 [13]			1.4382 [13] @ 73°	
(from pine)		270 [19] @ 12mm	0.7729 [19] @ 70°		

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Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Octacosane	**61.6**		**0.7792 @ 61.6°**	**1.43679 @ 61.6°**	$\frac{dn}{dt} = -0.000392/°C.$ (65° to 80°)
C–(C)$_{26}$–C	59.4 [2] 60 [1] 61.5 [9] 61.6 [4] 62 [7] 64 to 65 [8]	278 [7] @ 15mm 224 [8] @ 1.1mm 205 [1] @ 0.2mm	0.7614 [2] @ 84° 0.7792 [4] @ 61.6°	1.4270 [2] @ 84° 1.42946 [7] @ 80° 1.42971 [7] @ 80° 1.43553 [7] @ 65° 1.43539 [7] @ 65°	
n-Octacosane (?)					
(from petroleum)	60 [3,5] 61.5 [14]	310 to 312 [3] @ 50mm 316 to 318 [5] @ 40mm 272 to 274 [14] @ 15mm 286 [10] @ 15mm	0.7637 [3] @ 90° 0.7704 [3] @ 80° 0.7769 [3] @ 70°		
(from silk cocoons)	62 [11]				
(from a plant)	70 [12]				
(from coal tar)	62 [13]				
(from paraffin)		286 [10] @ 15mm			

Name and Carbon Skeleton	M. P., °C	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
10-*n*-Nonyl-*n*-Nonadecane $C{-}(C)_8{-}C{-}(C)_8{-}C$ with $(C)_8{-}C$ on the central C	−6 to −5.5 [16] −5.5 [17]	232.5 to 233 [15] @ 3mm	0.7770 [17] @ 70°	1.4325 [17] @ 70°	

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Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Nonacosane	**64**				$\frac{dn}{dt} = -0.000386/°C.$ (65° to 85°)
C–(C)$_{27}$–C	62 to 62.5 [23] 63.4 to 63.6 [14] 63.5 [26] 63.9 [1] 64 [6] 64.4 [17]	286 [26] @ 15mm	0.7797 [1] @ 63.8°	1.43061 [26] @ 80° 1.43640 [26] @ 65°	
n-Nonacosane (?)					
(from petroleum)	62 to 63 [2] 62.3 [5] 63.1 [5] 64 [20] 64.0 [22]	346 to 348 [2] @ 40mm 280 to 282 [22] @ 15mm	0.7644 [5] @ 84° 0.7642 [5] @ 84°	1.4286 [5] @ 84°	
(from coal tar)	63.5 [3]	286 [3] @ 15mm		1.43061 [3] @ 80° 1.43640 [3] @ 65°	
(from gum myrrh)	62 to 63 [8]		0.7790 [8] @ 65°	1.4361 [8] @ 65°	
(from cabbage leaves)	62.7 to 62.8 [7]				
(from Haschisch)	63 [9]				
(from oils of Tetrademia glabrata)	64 [11]				
(from apples)	63.4 to 63.6 [16] 65.1 [10]				

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Nonacosane (?) (*Continued*)					
(from lignin)	67 to 68 [12]				
(from supa oil)	64 to 65 [13]				
(from beeswax)	63.5 [19]				
(from pollen of corn)	63.5 to 64 [21]				
(from paraffin)		293.5 to 296.5 @ 15mm [15]			

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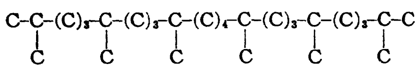
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
n-Triacontane	66				
C–(C)₂₈–C	65.2 to 65.5	304 [16,25] @ 15mm	0.7797 [1] @ 65.9°		
	65 to 66 [8]	235 @ 1mm [4]			
	65.5 [9]	100 [8] @ 0.00001mm			
	65.6 [1]				
	65.6 to 66 [6]				
	66 [7,15]				
	66.1 [2]				
	66 to 67 [17]				
	69 to 70 [4]				
n-Triacontane (?)					
(from paraffin)	70 [20]		0.7635 [20] @ 105.4°	1.42254 [20] $n_{H\alpha}^{105.4}$ 1.42996 [20] $n_{H\beta}^{105.4}$	
(from rose wax)	65.5 to 66 [18]	315 [13] @ 30mm			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Triacontane (?)—(*Continued*)					
(from coal)	60 [29]	270 to 300 [29] @ 20mm			
(from petroleum)	65.2 to 65.4 [32]	290 to 292 [32] @ 15mm			
(from supa oil)	63 to 64 [23]				Melting point of 63° to 64° [23] is that of $C_{29}H_{60}$ according to [17].
(from a plant)	65 [21,28]				
	66 [27]				
	66 to 66.5 [14]				
(from brown coal)	64 to 65 [22]				
(from apple skins)	63.5 to 64 [31]				
Mellisane					
(from melissyl alcohol)	73 to 74 [4,30]	222 [4] @ 0.3mm			

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2,6,10,15,19,23-Hexamethyltetracosane			**0.8098**	**1.4535**	
Squalene Perhydrosqualene 	−35 [5] Below −20 [11]	280 to 281 [11] @ 24mm 274 to 275 [12] @ 18mm 274 @ 10mm [5] 222 to 226 [10] @ 3mm 212 to 213 [10] @ 1mm	0.8093 [10] 0.8105 [11] 0.8137 [11] @ 15°	1.4525 [5] 1.4532 [15] 1.4534 [10] 1.4547 [12]	Chapman [11, 12] represented the molecular formula as $C_{29}H_{60}$, proposed the structure 4,7,10,14,17,20-Hexamethyltricosane, and called the hydrocarbon spinacane. Heilbron [10, 34] proved that spinacane and squalene are identical and that the molecular formula is $C_{30}H_{62}$

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Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Hentriacontane	**68.4**				$\frac{dD}{dt} = -0.0006035$/°C. (68.4° to 100°)
C–(C)$_{29}$–C	67.6 to 67.8 [10] 68 to 69 [7,16] 68.1 [2] 68.4 [3,11] 69 [6,8]	302 @ 15mm [2] 199 @ 0mm [1] 193.5 [3] @ 0mm	0.7619 [2] @ 98.8° 0.7730 [2] @ 80.8° 0.7808 [2] @ 68.1° 0.7799 [3] @ 68.4°		
n-Hentriacontane (?)					
(from petroleum)	65.3 [5] 65.9 [5] 66 [4,24] 67.8 to 68.2 [27]	316 to 318 [4] @ 50mm 299 to 303 [27] @ 15mm 200 to 205 [13] @ 0.01mm	0.7677 [5] @ 84° 0.7660 [5] @ 84° 0.7997 [4] D_{70}^{70}	1.4297 [5] @ 84° 1.4300 [5] @ 84°	
(from apricots)	68 [13]				
(from mentha piperita)	69 to 69.5 [18]				
(from Ghedda wax)	68 to 68.5 [26]				
(from myricyl iodide)	69 [23]				
(from beeswax)	68.4 to 69 [22]				
(from silk)	68 [20]				
(from spinach)	68 to 68.5 [17]				
(from pine)	68.5 [12]				

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Hentriacontane (?) (*Continued*)					
(from a plant)	67 to 69 [14,15] 68 [9] 68 to 69 [19] 68 to 69.5 [21]				

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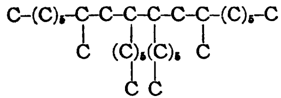
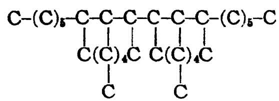
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Dotriacontane	**70.3**		**0.7816 @ 70.3°**	**1.4313 @ 84°**	$\frac{dD}{dt} = -0.0006224$/°C. (70.3° to 140°)
Dicetyl	68 [1]	310 [2] @ 15mm	0.7374 [25] @ 140°	1.4315 [3] @ 84°	
C–(C)$_{30}$–C	68 to 70 [23]	245 [9] @ 1.5mm	0.75185 [20] @ 118°	1.4312 [3] @ 84°	
	68.5 [3]	224.8 [17] @ 0.05mm	0.7645 [17] @ 100°	1.44299 [27] @ 79.4°	
	68.9 [3]	205 to 210 [1] @ 0.02mm	0.76321 [20] @ 100°	1.43859 [27] @ 79.4°	
	69.5 to 69.7 [16]	205 [4] @ 0mm	0.7687 [3] @ 84°	1.43094 [27] @ 79.4°	
	69.8 [6]	201 [6] @ 0mm	0.7742 [25] @ 80.4	1.4334 [10] @ 72°	
	69.9 [29]		0.7754 [27] @ 79.4°	1.4364 [29] @ 70°	
	70 [2]		0.7810 [2] @ 70°		
	70.2 [5,13,14]				
	70.5 [11,12,26]				
	74 to 74.5 [9]				
n-Dotriacontane (?) (from petroleum)	67 to 68 [7]	328 to 330 [7] @ 50mm	0.8005 [7] D_{75}^{75}		

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Dotriacontane (?)—*(Continued)*					
(from paraffin wax)	66.6 [17]	217 to 219 [17] @ 0.05	0.7678 [17] @ 100°		
(from candelilla wax)	71 [8]	310 @ 15mm [8]			
(from brown coal)	70 to 71 [38]				
(from mentha aquatica)	69.5 to 70 [21]				
(from crude tar)	69.6 [28]				
16-Methylhentriacontane					$\frac{dD}{dt} = -0.000639$/°C. (40° to 90°)
$C-(C)_{14}-C(-C)-(C)_{14}-C$	32 to 34 [15]		0.7824 [15] @ 83° 0.8086 [15] @ 42°	1.4395 [15] @ 71.5° 1.4517 [15] @ 40.5°	$\frac{dn}{dt} = -0.000394$/°C. (40° to 90°)

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
7,12-Dimethyl-9,10-di-*n*-hexyloctadecane (?) 		256 [22] @ 13mm	0.8182 [22]	1.4607 [22]	
7,9,10,12-Tetramethyl-8,11-di-*n*-pentyl-octadecane (?) 		256 [30] @ 13mm	0.8182 [30]	1.4607 [30]	Probably identical with preceding hydrocarbon.

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Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_{4}	n^{20}_{D}	Additional Data
n-Tritriacontane	**71.6**				
C-(C)$_{31}$-C	71.1 [3,6] 71.5 [12] 71.8 [1] 72 [10]	328 [7] @ 15mm	0.7801 [1] @ 71.8°		
n-Tritriacontane (?)					
(from paraffin wax)	69.4 [2] 71.0 [8] 71.1 [5]		0.7706 [2] @ 84° 0.7695 [2] @ 84°	1.4323 [2] @ 84° 1.4316 [2] @ 84°	
(from Hypericum perforatum L.)	63 [9]				
16-Ethylhentriacontane					
(C)$_{15}$-C-(C)$_{15}$ | C-C	14 to 18 [4] 32 [11]		0.7934 [4] @ 66° 0.8214 [4] @ 22.5°		$\frac{dD}{dt} = -0.000644$/°C. (20° to 70°)

(1) F. Krafft, Ber. **40**, 4783, 1907.
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Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Tetratriacontane	**73**		**0.7806 @ 73°**		
C-(C)$_{32}$-C	72.4[8] 72.5 to 72.8[10] 72.6 to 72.8[12] 72.8[11] 72.9[1] 73[2] 73.2[5,6] 73.5[14] 76 to 76.5[4]	336 @ 15mm[9] 255 @ 1mm[4] 215 @ 0mm[2]	0.8073[14] @ 80° 0.7806[2] @ 73°		
n-Tetratriacontane (?)					
(from paraffin)	72.3[7]		0.7715[7] @ 84° 0.7706[7] @ 84°	1.4329[7] @ 84° 1.4323[7] @ 84°	
(from petroleum)	71 to 72[3]	366 to 368[3] @ 50mm	0.8009[3] D_{80}^{80}		
(from oleander)	70[13]				
(from brown coal tar)	73[15]				

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Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_{4}	n^{20}_{D}	Additional Data
n-Pentatriacontane	**74.6**		**0.7814 @ 74.6°**		$\frac{dD}{dt} = -0.000613/°C.$ (74.6° to 100°)
C–(C)$_{33}$–C	73 [4,5,14] 74 [1,7,8] 74.4 to 74.6 [10] 74.6 [12] 74.7 [2]	331 @ 15mm [2] 222 @ 0mm [1]	0.7664 [2] @ 99.2° 0.7775 [2] @ 80.8° 0.7816 [2] @ 74.5° 0.7813 [1] @ 74°		
n-Pentatriacontane (?)					
(from petroleum)	76 [3]	380 to 384 [3] @ 50mm	0.8052 [3] D^{80}_{80}		
(from paraffin)	73.6 to 73.9 [6]		0.7728 [6] @ 84° 0.7727 [6] @ 84°	1.4334 [6] @ 84° 1.4333 [6] @ 84°	
(from the cotton plant)	75 [11]				
(from Agave rigida)	70 to 72 [13]				
(from bitumen)	75 to 76 [15]				
16-Butylhentriacontane					$\frac{dD}{dt} = -0.000648/°C.$ (20° to 70°)
(C)$_{15}$–C(–(C)$_4$)–(C)$_{15}$	23 [9]		0.7913 [9] @ 70° 0.8263 [9] @ 16°	1.4408 [9] @ 70° 1.4602 [9] @ 19°	$\frac{dn}{dt} = -0.000380/°C.$ (20° to 70°)

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(13) V. H. Legg and R. V. Wheeler, J. Chem. Soc. **1929,** 2444.
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(15) N. Titow, Brennstoff-Chem. **13,** 266, **1932.**
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Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Hexatriacontane	**76**				
C–(C)$_{34}$–C	75 [5] 75.7 to 75.9 [8] 76 [1,2,7] 76.5 [3] 78.5 [4]	265 @ 1mm [4] 230 to 240 @ 0.02mm [5] 230 @ 0mm [1]	0.7819 [1] @ 75°		
n-Hexatriacontane (?)					
(from paraffin)	74.8 to 75.6 [6]		0.7741 [6] @ 84° 0.7739 [6] @ 84°	1.4342 [6] @ 84° 1.4339 [6] @ 84°	

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Name and Carbon Skeleton	M. P.,°C.	B. P., °C. @ 760mm	D^{20}_{4}	n^{20}_{D}	Additional Data
n-Heptatriacontane (?)					
(from paraffin)	76.2 [1] 76.4 [1]		0.7753 [1] @ 84° 0.7743 [1] @ 84°	1.4347 [1] @ 84° 1.4345 [1] @ 84°	
18-Ethylpentatriacontane					
C–(C)$_{16}$–C(–C–C)–(C)$_{16}$–C	20 to 21 [4] 27 to 28 (after standing) [4] 39 [2] 39.5 [6]	260 to 265 [4] @ 0.5mm	0.773 [6] @ 100°	1.4348 [6] @ 90°	
$C_{38}H_{78}$					
n-Octatriacontane					
C–(C)$_{36}$–C	79.3 [6]		0.7688 [6] @ 100°	1.4326 [6] @ 90°	
n-Octatriacontane (?)					Octatriacontanes: (8,964,747,474,595 Structural Isomers possible [3])
(from paraffin)	77.1 [1] 77.2 [1] 79.4 [5]		0.7759 [1] @ 84° 0.7757 [1] @ 84° 0.961 [5]	1.4351 [1] @ 84° 1.4349 [1] @ 84°	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
18-*n*-Propylpentatriacontane					
$C-(C)_{16}-C-(C)_{16}-C$ $C-C-C$	64 5[6]		0.781[6] @ 100°	1.4376[6] @ 90°	
$C_{39}H_{80}$					
***n*-Nonatriacontane** (?)					Nonatriacontanes: (23,647,478,933,969 structural isomers possible[3])
(from paraffin)	78.8[1] 79.0[1]		0.7771[1] @ 84°	1.4359[1] @ 84° 1.4358[1] @ 84°	

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Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Tetracontane					
C–(C)₃₈–C	80.5 to 81 [1]	150 [1] @ 0.00001mm			
n-Tetracontane (?)					
(from paraffin)	80.3 [2] 80.5 [2]		0.7785 [2] @ 84° 0.7780 [2] @ 84°	1.4365 [2] 1.4363 [2]	
2,6,10,14,19,23,27,31-Octamethyldotriacontane					
(from phytol)		240 to 242 [3] @ 0.3mm 212 to 214 [4] @ 0.02mm	0.824 [4] @ 18°	1.4590 [4] @ 18°	
Perhydrolycopin					
(probably 2,6,10,14,19,23,27,31-octamethyldotriacontane)		238 to 240 [4] @ 0.3mm 212 to 214 [4] @ 0.02mm	0.8211 [3] @ 18° 0.822 [4] @ 18°	1.45837 [3] @ 18° 1.4584 [4] @ 18°	

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Name and Carbon Skeleton	M. P.,°C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Hentetracontane (?)					
(from paraffin)	80.7 [1] 82.5 [1]		0.7784 [1] @ 84°	1.4366 [1] @ 84° 1.4372 [1] @ 84°	
$C_{42}H_{86}$					
n-Dotetracontane (?)					
(from paraffin)	82.9 [1]		0.7803 [1] @ 84°	1.4375 [1] @ 84°	
$C_{43}H_{88}$					
n-Tritetracontane (?)					
(from paraffin)	83.3 [1] 83.8 [1]		0.7810 [1] @ 84°	1.4378 [1] @ 84° 1.4379 [1] @ 84°	
$C_{44}H_{90}$					
n-Tetratetracontane					
C–(C)$_{42}$–C	86.4 [2]				
$C_{45}H_{92}$					
n-Pentatetracontane (?)					
(from rubber)		350 @ 1mm [3]			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
4,8,13,17,22,26,31,35-Octamethyloctatriacontane					
(Dibixane)		270 to 275 [4] @ 0.2mm 255 to 260 [4] @ 0.08mm	0.8287 [4] @ 20.9°	1.46265 [4] @ 20.9°	
$C_{47}H_{96}$					
16-Pentadecyldotriacontane					
16-Cetylhentriacontane					
$(C)_{15}-\underset{\displaystyle (C)_{15}}{\underset{\mid}{C}}-(C)_{16}$	45.5 to 46 [5]			1.4450 [5] @ 66°	

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Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
7,16-Dimethyl-9,11,12,14-tetra-*n*-hexyldocosane					
C–C–C–C–C–C–C–C–C–C–C–C $(C)_5$ $(C)_6$ $(C)_6(C)_6$ $(C)_6$ $(C)_5$		200 to 205 [1] @ 0.003mm	0.8852 [1] @ 25°		
$C_{50}H_{102}$					
***n*-Pentacontane**					
$C-(C)_{48}-C$	91.9 to 92.3 [2] 93.0 [3]	420 to 422 [3] @ 15mm 200 [2] @ 0.00001mm	0.9422 [3] (solid) 0.7940 [3] @ 93.0°		
$C_{52}H_{106}$					
***n*-Dopentacontane**	94 [5]				
$C-(C)_{50}-C$					

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Tetrapentacontane					
Diceryl	95 [4]				
C–(C)$_{52}$–C					

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Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
19,34-Diethyldopentacontane					
$C_{18}-C(-C-C)-(C)_{14}-C(-C-C)-(C)_{18}$	26 [6]				
$C_{60}H_{122}$					
***n*-Hexacontane**					Hexacontanes: (22,158,734,535,770,411,074,184 structural isomers possible [6])
$C-(C)_{58}-C$	98.5 to 99.3 [1]	250 [1] (@ 0.00001mm	0.7203 [5] @ 190.6° 0.7244 [5] @ 178.8° 0.7311 [5] @ 159.9° 0.7335 [5] @ 153.15° 0.7417 [5] @ 129.5° 0.7465 [5] @ 115.4°		$\frac{dD}{dt} = -0.0003491/°C.$ (115° to 195°)
$C_{62}H_{126}$					
***n*-Dohexacontane**					
Dimyricyl	100.5 [2]				
$C-(C)_{60}-C$	101 to 102 [3] 101 to 102 [4]				

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Tetrahexacontane					
Dilacceryl					
C–(C)$_{62}$–C	102 [2]				
$C_{66}H_{134}$					
n-Hexahexacontane					Impure [7]
C–(C)$_{64}$–C	103.6 [7]				
$C_{67}H_{136}$					
n-Heptahexacontane					Impure [7]
C–(C)$_{65}$–C	104.1 [7]				

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Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
n-Heptacontane					
C–(C)$_{68}$–C	105 to 105.5 [1]	300 [1] @ 0.00001mm			
$C_{94}H_{190}$ 2,5,9,13,17,24,28,32,36,41,45,49,53,60,64,68,72,75-Octadecamethylhexaheptacontane					
		330 [2] @ 0.04mm			

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III. PHYSICAL CONSTANTS OF ALKENES OR OLEFINS

1. Alkenes or Monoolefins
2. Alkadienes or Diolefins
3. Alkatrienes or Triolefins
4. Alkatetraenes or Tetraolefins
5. Alkapentaenes or Pentaolefins
6. Alkahexaenes or Hexaolefins

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C.* @ 760mm	D_4^{20}	n_D^{20}	*Additional Data*
Ethene C=C	**−169.44**	**−102.4**	**0.6104_3** @ **−102.4°**		$\log_{10} P_{atm} = \frac{-995.30018}{T} + 8.7083545 - 0.025907196T + 0.00006380597T^2 - 0.00000005603635T^3$ (0.0517 to 48.162 atm.) ($T = t$°C + 273.09)[15] $\frac{dD}{dt} = -0.002033(1+0.002859t)$/°C. (−150° to −70°)
	−183[19] ca. −181.4[17] −169.44[8] −169.4[14] −169.00[6] −169[17]	−101.4[7] @ 800mm −103.9[8] @ 767.5mm −105.4[9] −105[4] −104.3[6] −104[20] −103.9[2,3,14] −103.55[22] −103.50[21] −102.5[17,19] −102.45[18] −102.4[7] −102 to −103[23] −100[12] −102.7[11] @ 756.9mm −102.65[11] @ 756.9mm −102.6[7] @ 750mm −103[16] @ 750mm −102.9[11] @ 744.3mm −110.33[15] @ 508mm −126[16] @ 107mm −129.2[19] @ 100mm −132.2[2,3] @ 100mm −150.4[16] @ 9.8mm −154.8[2,3] @ 9mm	0.21597[15] @ 9.5° 0.335[1] @ 8° 0.28726[15] @ 7.98° 0.30342[15] @ 6.50° 0.306[5] @ 6.2° 0.361[1] @ 6° 0.30840[15] @ 5.84° 0.332[5] @ 4.3° 0.386[1] @ 3° 0.353[5] @ −3.7° 0.37721[15] @ −7.70° 0.38818[15] @ −10.93° 0.39855[15] @ −14.18° 0.41313[15] @ −19.205° 0.414[5] @ −21° 0.42655[15] @ −24.33° 0.45610[15] @ −37.13° 0.47822[15] @ −48.15°	1.3632[12] @ −100°	

Name and Carbon Skeleton	M. P., °C	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Ethene—(*Continued*)					
			0.50588 [15] @ 63.41°		
			0.5172 [14] @ −69.45°		
			0.5247 [14] @ −74.2°		
			0.5400 [14] @ −84.05°		
			0.5482 [14] @ −89.4°		
			0.5559 [14] @ −94.3°		
			0.5630 [14] @ −99.05°		
			0.5631 [13] @ −99.4°		
			0.56740 [15] @ −103.01°		
			0.5657 [13] @ −103.3°		
			0.5696 [14] @ −103.7°		
			0.5699 [14] @ −103.9°		
			0.5669 [13] @ −105.0°		
			0.5710 [9] @ −105.4°		

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Ethene—(*Continued*)					
			0.5674 [13] @ −105.9°		
			0.5696 [13] @ −107.7°		
			0.5762 [14] @ −108.7°		
			0.5752 [13] @ −114.2°		
			0.58380 [15] @ −114.69°		
			0.60449 [15] @ −129.90°		
			0.62465 [15] @ −145.07°		
			0.6585 [9] @ −169°		

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Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_4	n^{20}_D	Additional Data
Propene	**−185**	**−47.7**	**0.6104_3 @ −47.7°**		$\log_{10} P_{mm} = \frac{-709.6}{T} + 1.75 \log_{10} T + 0.0039T + 1.025$ [3] (0.6 to 760mm) ($T = t°C + 273.1$)
C=C–C	>−187 [7] −185.2 [9] −184.9 [5]	−47.64 [6] @ 764mm −47.8 [2,3] −47.7 [5] −47.0 [9] −47.67 [1] @ 759.1mm −47.91 [6] −47.8 [10] @ 750mm −48.2 [8] @ 749mm −50.2 [7] @ 749mm −48.7 [2,3] @ 730mm −49.6 [2,3] @ 700mm −51.1 [2,3] @ 650mm −52.8 [2,3] @ 600mm −56.3 [2,3] @ 500mm −60.6 [2,3] @ 400mm −65.7 [2,3] @ 300mm −73.2 [2,3] @ 200mm −78.0 [2,3] @ 150mm −84.4 [2,3] @ 100mm −94.2 [2,3] @ 50mm −101.4 [2,3] @ 30mm −110.4 [2,3] @ 15mm	0.5183 [9] @ 19° 0.5473 [9] @ 0° 0.5691 [9] @ −15.65° 0.5854 [9] @ −27.85° 0.5937 [9] @ −34.4° 0.5973 [9] @ −37.45° 0.6095 [9] @ −47.0° 0.6109 [9] @ −48.5° 0.6247 [9] @ −58.5° 0.6486 [9] @ −78.2° 0.647 [10] @ −79°	1.3625 [4] @ −47.8° 1.3713 [4] @ −60° 1.3857 [4] @ −80°	$\frac{dD}{dt} = -0.001411 \cdot (1 + 0.0009653t)/°C.$ (−80° to 20°) $\frac{dn}{dt} = -0.0007204/°C.$ (−80° to −48°)

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Propene—(*Continued*)					
		−120.3 [2,3] @ 6mm			
		−127.4 [2,3] @ 3mm			
		−138.1 [2,3] @ 1.07mm			
		−143.1 [2,3] @ 0.59mm			

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Name and Carbon Skeleton	*M. P., °C*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Butene-1		**−6.47**	**0.6255_4 @ −6.47°**		$\frac{dD}{dt} = -0.001153 \cdot (1+0.001986t)$/°C. (−40° to +10°)
C=C–C–C	>−195[16] >−190[5]	−3.7[5] @ 833.7mm −4.4[5] @ 811.4mm −5.9[9] @ 775mm −6.1[5,7] −6.6 to −6.4[13] −6.7[8] −6.7 to −6.5[13] −5[3,10,19] −2[15] @ 758mm −6.8 to −6.5 @ 748mm[12] −6.7 to −6.5 @ 748mm[12] −6.7[5] @ 740.2mm −8.5[5] @ 691.3mm −11.3[5] @ 621.7mm −14.3[5] @ 549.6mm −17.0[5] @ 491.3mm −19.4[5] @ 445.1mm −23.1[5] @ 377.7mm −25.6[5] @ 338.0mm −28.6[5] @ 302.9mm −29.9[5] @ 276.9mm	0.6067[5] @ 9.8° 0.6077[5] @ 8.9° 0.6088[5] @ 8.1° 0.6105[5] @ 6.6° 0.6109[5] @ 6.1° 0.6127[5] @ 4.7° 0.6142[5] @ 3.6° 0.6158[5] @ 1.9° 0.6170[5] @ −0.5° 0.6189[5] @ −1.4° 0.6209[5] @ −2.5° 0.6229[5] @ −4.1° 0.6241[5] @ −5.2° 0.6261[5] @ −6.9° 0.6277[5] @ −8.2° 0.6298[5] @ −10.3° 0.6314[5] @ −11.8° 0.6334[5] @ −13.4° 0.6359[5] @ −15.4° 0.6385[5] @ −17.9°	1.3803[7] @ −25.0°	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Butene-1—(*Continued*)					
		−32.6 [5] @ 242.2mm	0.6409 [5] @ −20.0°		
		−33.7 [5] @ 230.0mm	0.6426 [5] @ −21.5°		
		−44.6 [5] @ 130.8mm	0.6450 [5] @ −24.0°		
		−52.3 [5] @ 83.3mm	0.6466 [5] @ −25.7°		
		−57.1 [5] @ 62.0mm	0.6489 [5] @ −27.6°		
		−60.1 [5] @ 50.5mm	0.6507 [5] @ −29.0°		
		−77.5 [5] @ 23.5mm	0.6528 [5] @ −30.9°		
			0.6547 [5] @ −33.0°		
			0.6571 [5] @ −35.0°		
			0.6606 [5] @ −38.2°		
			0.6651 [5] @ −42.4°		
			0.6655 [5] @ −43.0°		
			0.6690 [5] @ −46.0°		
***cis* Butene-2**	**−139.3**	**3.73**			$\log_{10} P_{mm} = \frac{-2379.264}{T} - 15.4405 \log_{10} T + 0.0097519T + 46.48442$ [9] (−80° to +30°)
C–C=C–C	−139.3 [9,16]	3.73 [9] 2.0 to 2.7 [18] @ 754mm 3.0 [1] @ 746mm 2.95 to 3.05 [20] @ 746mm 2.5 to 2.7 [21] @ 740mm			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
***trans* Butene-2** C–C=C–C	**−105.8** −105.8 [9,16]	 0.30 to 0.40 [20] @ 744mm 0.3 [1] @ 744mm			$\log_{10} P_{mm} = \frac{-2505.74}{T} - 18.78681 \log_{10} T + 0.012991T + 34.25987$ [9] (−80° to +30°)
Butene-2 (Mixtures of *cis* and *trans* isomers) C–C=C–C	−127 [5]	20.4 [5] @ 1550mm 18.3 [5] @ 1450mm 16.2 [5] @ 1320mm 2.9 [5] @ 814mm 3.0 [14] 1.9 to 2.2 [17] 1.0 [5] 0 to 3 [8] −0.1 to +0.9 [17] +1.0 [11] @ 741.4mm −1.0 [5] @ 707.4mm −3.3 [5] @ 644.6mm −4.7 [5] @ 609.8mm −7.1 [5] @ 555.2mm −9.7 [5] @ 499.7mm −14.9 [5] @ 402.7mm −16.0 [5] @ 383.2mm	0.6105 [5] @ 17.8° 0.6146 [5] @ 14.3° 0.6169 [5] @ 12.3° 0.6210 [5] @ 8.6° 0.6216 [5] @ 5.9° 0.6267 [5] @ 3.8° 0.6289 [5] @ 1.7° 0.6303 [5] @ 0.9° 0.6315 [5] @ −0.3° 0.6345 [5] @ −2.8° 0.6355 [5] @ −4.2° 0.6387 [5] @ −6.6° 0.6416 [5] @ −9.4° 0.6439 [5] @ −11.5° 0.6454 [5] @ −13.0°		

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Butene-2—(*Continued*)					
		−19.2 [5] @ 334.7mm	0.6480 [5] @ −15.5°		
		−22.3 [5] @ 325.0mm	0.6507 [5] @ −18.2°		
		−23.8 [5] @ 272.2mm	0.6549 [5] @ −21.8°		
		−27.0 [5] @ 233.3mm	0.6576 [5] @ −24.4°		
		−30.0 [5] @ 201.4mm	0.6611 [5] @ −27.5°		
		−32.1 [5] @ 181.5mm	0.6638 [5] @ −30.4°		
		−33.9 [5] @ 165.7mm	0.6666 [5] @ −32.8°		
		−36.0 [5] @ 149.2mm	0.6689 [5] @ −35.3°		
		−37.2 [5] @ 140.7mm	0.6700 [5] @ −36.3°		
		−40.2 [5] @ 118.8mm	0.6715 [5] @ −38.2°		
		−47.1 [5] @ 79.6mm	0.6746 [5] @ −42.4°		
		−53.8 [5] @ 53.3mm			
		−60.1 [5] @ 35.3mm			
		−66.8 [5] @ 21.9mm			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2-Methylpropene	**−140.7**	**−6.6**	**0.6266_4 @ −6.6°**		$\frac{dD}{dt} = -0.001143 \cdot (1+0.001409t)$/°C. (−50° to +12°)
C=C-C | C	−146.8 [5,6]	22.1 [6] @ 2017mm	0.6058 [6] @ 11.5°	1.3814 [7] @ −25.0°	
	−140.7 [9,16]	20.6 [6] @ 1965mm	0.6087 [6] @ 9.1°		
		17.4 [6] @ 1780mm	0.6095 [6] @ 7.3°		
		14.7 [6] @ 1624mm	0.6135 [6] @ 5.0°		
		13.0 [6] @ 1535mm	0.6179 [6] @ 2.3°		
		11.4 [6] @ 1454mm	0.6180 [6] @ 1.0°		
		8.8 [6] @ 1340mm	0.6190 [6] @ 0.1°		
		5.9 [6] @ 1213mm	0.6234 [6] @ −3.7°		
		3.5 [6] @ 1114mm	0.6267 [6] @ −6.5°		
		1.8 [6] @ 1044mm	0.6268 [6] @ −6.6°		
		−2.2 [6] @ 903mm	0.6299 [6] @ −9.5°		
		−4.6 [6] @ 826mm	0.6324 [6] @ −11.7°		
		−6.0 [6] @ 778.7mm	0.6343 [6] @ −13.5°		
		−6.67 [9] @ 770mm	0.6391 [6] @ −17.4°		
		−6.6 [6,7] −6.3 [10]	0.6408 [6] @ −19.1°		
		−6 [4] −4 [3]	0.6428 [6] @ −21.0°		
		−8.8 [6] @ 695.8mm	0.6444 [6] @ −22.5°		
		−12.0 [6] @ 610.6mm	0.6468 [6] @ −24.8°		
		−16.4 [6] @ 510.9mm	0.6520 [6] @ −29.7°		
		−20.0 [6] @ 437.5mm	0.6546 [6] @ −31.7°		

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2-Methylpropene *(Continued)*					
		−22.6 [6] @ 390.9mm	0.6581 [6] @ −34.8°		
		−25.5 [6] @ 345.3mm	0.6604 [6] @ −37.2°		
		−29.0 [6] @ 293.9mm	0.6632 [6] @ −40.4°		
		−30.7 [6] @ 265.1mm	0.6658 [6] @ −42.1°		
		−35.3 [6] @ 216.0mm	0.6680 [6] @ −44.1°		
		−38.3 [6] @ 185.3mm	0.6710 [6] @ −46.9°		
		−41.0 [6] @ 161.6mm	0.6738 [6] @ −48.9°		
		−43.5 [6] @ 139.2mm			
		−46.0 [6] @ 121.1mm			
		−48.9 [6] @ 101.9mm			
		−52.5 [6] @ 82.7mm			
		−55.7 [6] @ 66.9mm			
		−59.3 [6] @ 53.5mm			
		−79.1 [6] @ 12.5mm			

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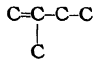
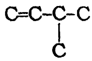
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_4	n^{20}_D	Additional Data
Pentene-1		**30.1**	**0.6429**	**1.3714**	$\frac{dn}{dt} = -0.0006186/°C.$ (−30° to +30°)
C=C–C–C–C		30.5 to 31 [33] @ 767mm	0.641 [33] @ 21°	1.3658 [25] @ 30°	
		30.4 [43] @ 766mm	0.6410 [72,74]	1.3714 [33] @ 21°	
		39 to 41 [56]	0.6414 [84]	1.3718 [27] @ 21°	
		39 to 40 [6,7]	0.6419 [68]	1.371 [4]	
		32.5 [4]	0.64199 [63]	1.3710 [43,72,74]	
		30.4 to 30.6 [86]	0.6420 [72]	1.3711 [44,68,72]	
		30.5 to 31.0 [68]	0.644 [4]	1.3712 [63]	
		30.2 [72]	0.64512 [44]	1.3719 [25]	
		30.1 to 30.3 [84]	0.6465 [16] D^{20}_{20}	1.3731 [27]	
		30.1 [72]	0.6483 [46]	1.3736 [84]	
		30.10 [74]	0.637 [33] @ 18°	1.3734 [46] @ 19.5°	
		30.0 to 30.1 [50]		1.3719 [33] @ 18°	
		30 to 31 [33]		1.4024 [25] @ −30°	
		30.0 [27]		1.36956 [44] $n^{20}_{H\alpha}$	
		29.9 to 30.1 [77]		1.37769 [44] $n^{20}_{H\beta}$	
		30.5 to 31 [63] @ 754mm			
		29 to 29.5 [46] @ 751mm			
		29.8 to 30.0 [44] @ 750mm			
		29.5 to 31 [16] @ 747.8mm			

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
cis Pentene-2		**37**	**0.6503**	**1.38130**	$\frac{dD}{dt} = -0.0009989 \cdot (1+0.002356t)/°C.$ (−70° to +50°)
C–C=C–C–C	−180 to −178 [42]	37.8 [71]	0.5824 [67] @ 80°	1.37960 [13]	
	−144 [13]	37.0 [70]	0.5982 [67] @ 70°	1.37965 [73]	
		36.5 [3]	0.6112 [67] @ 60°	1.3817 [43]	
		36 to 40 [73]	0.6181 [67] @ 50°	1.3822 [70,71]	
		36.2 [42]	0.6288 [67] @ 40°		
		35.5 to 36 [13]	0.6392 [67] @ 30°		
		35.4 [42] @ 740mm	0.6503 [67,73]		
			0.6562 [70]		
			0.6586 [71]		
			0.6608 [67] @ 10°		
			0.6710 [67] @ 0°		
			0.6811 [67] @ −10°		
			0.6903 [67] @ −20°		
			0.6995 [67] @ −30°		
			0.7085 [67] @ −40°		
			0.7172 [67] @ −50°		
			0.7269 [67] @ −60°		
			0.7350 [67] @ −70°		

Name and Carbon Skeleton	*M. P.,°C.*	*B. P.,°C.* @ 760mm	D_4^{20}	n_D^{20}	*Additional Data*
trans **Pentene-2**		**35.85**	**0.64821**	**1.3792**	$\frac{dD}{dt} = -0.0009780 \cdot (1+0.0025143t)$/°C. (−70° to +80°)
C–C=C–C–C	−149.3 [67] −149 [13] −147 [61,62] −136 to −135 [42]	37 to 38 [20] 37 [20] 36.40 [61,62] 36.25 [71] 36.2 [42] 35.85 [69] 35.8 [13] @ 755mm 35.9 to 36.0 [35] @ 744mm 35.7 to 35.9 [35] @ 743mm 35.4 [42] @ 740mm 35.65 to 35.70 @ 737mm [35]	0.5814 [67] @ 80° 0.5938 [67] @ 70° 0.6053 [67] @ 60° 0.6163 [67] @ 50° 0.6275 [67] @ 40° 0.6381 [67] @ 30° 0.6481 [67,69] 0.6486 [71] 0.6535 [61,62] @ 17.2° 0.6595 [61,76] @ 11° 0.6580 [67] @ 10° 0.6675 [67] @ 0° 0.6770 [67] @ −10° 0.6866 [67] @ −20° 0.6960 [67] @ −30° 0.7052 [67] @ −40° 0.7140 [67] @ −50° 0.7227 [67] @ −60° 0.7314 [67] @ −70°	1.37845 [13] 1.37849 [69] 1.3790 [71] 1.3795 [35] 1.3797 [35] 1.3799 [43] 1.38169 [61] @ 17.2° 1.38568 [61] @ 11°	

Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C.* @ 760mm	D_4^{20}	n_D^{20}	*Additional Data*
Pentene-2 (Mixtures of *cis* and *trans* isomers) C–C=C–C–C	−147.0 [78] −138 [57]	34.5 [4] 35 to 36 [7] 35 to 37 [41] 35.5 to 35.8 [25] 35.5 to 37.5 [27] 36 [57] 36.0 to 36.2 [85] 36 to 37 [2] 36.2 to 36.4 [77] 36.2 to 36.5 [34] 36.25 [70] 36.3 [58] 36.3 to 36.5 [12] 36.39 [57] 36.4 [59,78] 36.55 [70] 36.55 to 36.6 [12] 36.59 to 36.64 [64] 37 to 39 [9] 36.5 to 36.8 [58] @ 754mm 36 [80] @ 740.8mm 36.0 to 36.2 @ 740mm [63]	0.64021 [57] @ 30° 0.64537 [57] @ 25° 0.6485 [59] 0.6499 [63] 0.6503 [58,70,74] 0.6504 [12] 0.6505 [73] 0.65054 [57] 0.6506 [12] 0.6520 [64] 0.6523 [70] 0.6527 [70] 0.653 [2] 0.6540 [74] 0.647 [4] @ 19° 0.65551 [57] @ 15° 0.6576 [2] @ 14.5°	1.3780 [25] 1.3782 [25] 1.3784 [25] 1.3786 [12] 1.37889 [63] 1.3790 [25] 1.3793 [12,59] 1.37935 [58] 1.3796 [34] 1.37965 [58,74] 1.3797 [73] 1.3798 [12,74] 1.3807 [70] 1.3808 [57] 1.3810 [64,70] 1.3812 [2] 1.375 [4] @ 19° 1.3814 [59] @ 17.5° 1.3839 [57] @ 15° 1.3840 [27] @ 15° 1.38354 [2] @ 14.7° 1.3868 [57] @ 10° 1.3899 [57] @ 5.3°	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2-Methylbutene-1		**31**	**0.6504**	**1.3785**	
		31.21 to 31.24 @ 762mm [34]	0.6504 [74]	1.3776 [48]	
		28.8 to 31.8 [19]	0.6645 [47]	1.3777 [34]	
		30 to 31 [47]	D_{20}^{17}	1.3783 [74]	
		30.9 [48]	0.6668 [20]	1.3803 [14]	
		31 to 32 [38]	D_0^0	1.3952 [47] @ 17°	
		31 to 33 [20,56]	0 670 [38] @ 0°	1.378 [20] @ 16°	
		31.05 [74]		1.3800 [27] @ 15°	
		31.1 [27]			
		31.2 [28]			
		31.3 to 32.6 [14]			
		33 to 35 [8]			
		32 [45] @ 757.6mm			

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_4	n^{20}_D	*Additional Data*
3-Methylbutene-1		**20.1**	**0.6340 @ 15°**	**1.3677 @ 15°**	
		21.1 to 21.3 [86] @ 780.2mm 20.5 to 20.7 [45] @ 771.20mm 19.8 to 20.4 [39] @ 761.5mm 25 [22] 21.25 [28] 21 to 24 [29] 20.5 to 21.5 [27,56] 20.18 to 20.21 [15,83] 20.10 [57] 20 to 20.5 [14] 19 to 20 [47] 21 to 23 [51] @ 755mm 19.2 to 20.0 [72] @ 754mm 20.2 [21] @ 749mm	0.63197 [57] @ 15° 0.6323 [83] @ 15° 0.6338 [39] @ 15° 0.6373 [51] @ 15° 0.645 [47] D^{15}_{20} 0.648 [21] @ 0°	1.3897 [47] @ 18° 1.3728 [82] @ 18° 1.3682 [27] @ 15° 1.3680 [72] @ 15° 1.3676 [83] @ 15° 1.3675 [15,57] @ 15° 1.3674 [39] @ 15° 1.3707 [57] @ 10° 1.3762 [57] @ 0° 1.36487 [39] $n^{15}_{H\alpha}$ 1.37283 [39] $n^{15.1}_{H\beta}$ 1.37763 [39] $n^{15.1}_{H\gamma}$	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2-Methylbutene-2		**38.6**	**0.6596_0**	**1.3876**	$\frac{dD}{dt} = -0.0009799 \cdot (1+0.00588t)$/°C. (−70° to +80°)
C-C=C-C C	−146.1 [67]	38.2 to 38.7 [10] @ 766mm	0.5853 [67] @ 80°	1.3781 [57] @ 35°	$\frac{dn}{dt} = -0.0006166$/°C. (10° to 35°)
	−134.3 [79]	37.8 to 38.3 [45] @ 764.25mm	0.5950 [67] @ 70°	1.3814 [57] @ 30°	
	−133.6 [34]	38.68 [34] @ 762mm	0.6065 [67] @ 60°	1.3890 [53] @ 21°	
	−123 [57]	30 to 40 [53]	0.6237 [67] @ 50°	1.3878 [14,57,74]	
		33 to 40 [57]	0.6352 [67] @ 40°	1.3877 [1,80]	
		34 to 39 [57]	0.6468 [67] @ 30°	1.3869 [34,75]	
		34 to 40 [57]	0.65694 [57] @ 25°	1.3856 [82]	
		35 [11]	0.65730 [10] @ 25°	1.3855 to 1.3860 [35] @ 19°	
		35 to 37 [30]	0.6578 [67]	1.3870 [5] @ 19°	
		35 to 38.5 [54]	0.66277 [32]	1.3875 [49] @ 19°	
		35 to 39 [26]	0.6627 [49]	1.3900 [54] @ 18°	
		35 to 39 [54]	0.6625 [80]	1.3905 [54] @ 18°	
		35 to 40 [57]	0.66250 [1]	1.3883 [32] @ 16.4°	
		36 [66,86]	0.6620 [74]	1.3898 [27] @ 15°	
		36 to 37 [45]	0.6627 to 0.6630 [35] @ 19°	1.3908 [57] @ 15°	
		36.0 to 37.3 [14]	0.6634 [53] @ 19°	1.3939 [57] @ 10°	
		36 to 38 [38]	0.66470 [32] @ 18.1°		
		36 to 40 [52,57]	0.665 [54] @ 17°		
		36.7 [32]	0.66641 [32] @ 16.5°		
		36.8 to 38.4 [82]	0.663 [55] @ 16°		
		37 to 38 [18]	0.66708 [57] @ 15°		
		37 to 40 [53]	0.6663 [54] @ 15°		
		37.2 [35,79]	0.66888 [32] @ 14°		
		37.2 to 38.2 [5]			
		37.5 to 39 [27]			
		37.7 [17]			
		38 [32,45,56]			
		38.0 to 38.3 [31]			
		38 to 40 [57]			
		38.2 to 38.4 [1,80]			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2-Methylbutene-2 (*Continued*)		38.4 to 38.5 [49] 38.42 [57,74] 38.5 to 38.6 [86] 38.6 [28] 39 [3] 36.3 to 37.3 [19] @ 747mm 36 to 37 [45] @ 746.3mm	0.664 [55] @ 14° 0.6678 [17] @ 13.1° 0.665 [55] @ 13° 0.670 [55] @ 11° 0.6672 [67] @ 10° 0.6860 [67] @ 0° 0.68313 [32] @ 0° 0.6783 [38] @ 0° 0.6860 [67] @ −10° 0.6948 [67] @ − 0° 0.7034 [67] @ −30° 0.7132 [67] @ −40° 0.7216 [67] @ −50° 0.7302 [67] @ −60° 0.7384 [67] @ −70°		

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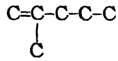
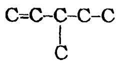
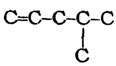
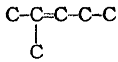
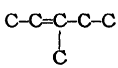
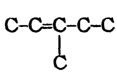
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Hexene-1 C=C–C–C–C–C	**−138** −140 [46] −139 [46, 47, 67] −138 [62] −98.6 to −100 [26] −98.5 [27]	**63.5** 63.8 to 64 [62] @ 774mm 67.7 to 68.1 [26] @ 761mm 70 [50] 67 [10] 65.9 to 67.6 [95] 64.5 to 65 [48] 63.6 to 64.1 [73] 63.5 to 63.7 [46] 63.45 to 63.55 [67] 63.4 to 63.7 [58] 63.35 [46,47] 63.2 to 63.7 [90] 62 [45] 61 to 64 [53] 64 [34] @ 756mm 60.5 to 61.5 [37] @ 756mm 62 to 63 [21] @ 751mm 63 to 64 [86] @ 745mm 62 to 64 [22] @ 745mm 63 to 64 [21] @ 742mm 61 to 65 [22] @ 742mm 62 to 63 [25] @ 740mm	**0.6747** 0.6726 [86] 0.6732 [58] 0.6746 [22] 0.6750 [21,62] 0.6766 [56] 0.6779 [21] 0.6784 [53] D_{20}^{20} 0.6686 [25] D_{20}^{20} 0.6830 [37] D_{20}^{20} 0.6734 [34] D_0^{20} 0.684 [45] @ 18° 0.6782 [46] @ 15° 0.67875 [47] @ 15° 0.6789 [22,47,67] @ 15° 0.684 [48] @ 14° 0.7148 [10] @ 10° 0.6831 [26] @ 0° 0.6920 [46] @ 0° 0.6925 [47] @ 0° 0.7241 [10] @ 0°	**1.3886** 1.3852 [99] @ 30° 1.3870 [95] @ 25° 1.38767 [62] @ 25° 1.3870 [86] @ 21° 1.3870 [22,34,56,58] 1.38319 [26] @ 15.5° 1.3821 [37] @ 15.5° 1.393 [48] @ 14° 1.407 [10] @ 10° 1.4021 [90] @ 0° 1.4190 [99] @ −30°	$\frac{dD}{dt} = -0.000831/°C.$ (0° to 20°) $\frac{dn}{dt} = -0.0006070/°C.$ (−30° to +30°) $\log_{10} P_{mm} = 7.527 - \frac{1578.4}{T}$ [95] (0° to 65°)

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
cis Hexene-2					
C–C=C–C–C–C		68.5 to 69.5 [74]	0.683 [74] @ 25°	1.3960 [74] @ 25°	
trans Hexene-2					
C–C=C–C–C–C	−152 [46] −148.7 [46]	68.0 to 68.2 [46]	0.6863 [46] @ 15° 0.6871 [46] @ 15° 0.7000 [46] @ 0°	1.3980 [46] @ 15° 1.3981 [46] @ 15°	

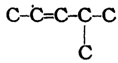
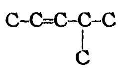
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Hexene-2 (Mixtures of *cis* and *trans* isomers) C–C=C–C–C–C	–144.6 [67]	65 to 67 [17] 67 [9,39] 67 to 70 [14] 67.5 [9] 67.8 to 67.9 [54] 67.9 to 68.1 [58] 68.0 to 68.2 [54, 92] 68 to 68.2 [67] 68 to 69 [36] 68 to 70 [2] 68.2 to 68.35 [67] 69 [1] 68 to 68.5 [12] @ 747mm 67 [4] @ 737.9mm 65 to 66 [4] @ 706mm	0.6792 [12] @ 23.3° 0.68376 [9] @ 20.4° 0.6825 [12] 0.6813 [58] 0.68414 [9] @ 19.75° 0.68592 [9] @ 18.1° 0.68767 [9] @ 16.2° 0.6849 [18] @ 16° 0.6671 [1] @ 16° 0.6849 [54] @ 15° 0.6852 [67] @ 15° 0.6855 [54] @ 15° 0.6862 [67] @ 15° 0.68952 [9] @ 14.2° 0.6937 [2] @ 0° 0.6986 [2,54] @ 0° 0.6988 [54] @ 0° 0.6997 [4,39] @ 0°	1.39446 [12] @ 23.3° 1.3958 [39] 1.3928 [58] 1.39439 [33] @ 19.5° 1.3974 [54] @ 15° 1.3995 [9] @ 15°	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
cis Hexene-3					
C–C–C=C–C–C		66.85 to 66.95 [103]	0.6775 [103]	1.3926 [103]	
		66.85 to 67.15 [103]	0.6784 [103]	1.3939 [103]	
		66.90 to 67.05 [103]	0.6797 [103]	1.3946 [103]	
		67.05 to 67.50 [103]	0.6802 [103]		
trans Hexene-3					
C–C–C=C–C–C		66.4 to 66.7 [102]	0.6784 [102]	1.3943 [102]	
Hexene-3					
(Mixtures of *cis* and *trans* isomers)		66.28 to 66.35 [98]	0.6779 [98]	1.3942 [98]	
C–C–C=C–C–C		66.46 to 66.59 [87]	0.6784 [98]	1.3947 [52,78,83,85,86]	
		66.58 to 66.72 [98]	0.6785 [79,83,85,87]	1.394 [58] @ 19°	
		66.58 to 66.93 [98]	0.6792 [98]		
		66.6 to 67.0 [58]	0.6807 [52] @ 19°		
		66.70 [78,83,85]	0.6816 [58] @ 19°		
		64 [52] @ 753mm	0.6962 [98] @ 0°		
		66.05 to 66.18 @ 748mm [87]	0.6967 [98] @ 0°		
			0.6975 [98] @ 0°		

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2-Methylpentene-1		**63**	**0.6824**		
		61.5 to 62.0 [57,58]	0.6817 [58]	1.3921 [57,58]	
		64 to 66 [37]	0.6831 [57]		
3-Methylpentene-1		**53.6**			
		51 to 55 [54]	0.6700 [58]	1.3835 [58]	
		53.6 to 54.0 [58]	0.6826 [54] @ 15°		
4-Methylpentene-1		**53.8**	**0.6647_6**		$\frac{dD}{dt} = -0.0009164$/°C. (0° to 20°)
		52.5 to 54 [86]	0.6638 [86]	1.3825 [58]	
		52.5 to 54.5 [53,63]	0.6646 [58]	1.3839 [86] @ 19.5°	
		53 to 59 [53]	0.6718 [53] D_{20}^{20}		
		53.6 to 53.9 [58]	0.6692 [61] @ 15°		
		53.8 to 54.2 [61]	0.6700 [61,66] @ 15°		
		53.9 to 54.1 [66]	0.6828 [61] @ 0°		
		54.0 to 54.1 [73]			
		55.0 to 55.5 [73]			

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2-Methylpentene-2		**66**	**0.693**	**1.3984**	
	−134.75 [44,67]	64 to 65 [23] 64 to 68 [55,90] 64 to 69 [89,90] 65 to 67 [7] 66 to 70 [55] 66.7 to 67.1 [44] 66.7 to 67.2 [67] 66.8 to 67.6 [61] 67 to 68 [13] 67.1 [101] 67.2 to 67.5 [58]	0.6965 [101] 0.6904 [58] 0.686 [89] @ 19° 0.687 [7] D_{19}^{19} 0.684 [90] @ 16° 0.685 [90] @ 15° 0.69145 [44] @ 15° 0.6925 [61] @ 15° 0.7051 [7] @ 0° 0.702 [44] D_0^0	1.3967 [90] 1.3970 [90] 1.3997 [101] 1.4005 [58] 1.4000 [89] @ 18° 1.4028 [44] @ 15°	
cis **3-Methylpentene-2**		**66**	**0.6940**	**1.3994**	
		65.1 to 65.7 [43] 65.7 to 66.2 [58,59] 68.8 to 69.4 [67]	0.6940 [58,59] 0.7220 [43] @ 15°	1.3994 [58,59] 1.3997 [43] @ 15°	
trans **3-Methylpentene-2**		**69**	**0.6956**	**1.4002**	
		67.6 to 68.2 [58,59] 69.9 to 70.2 [43] 70.2 to 70.5 [67,100]	0.6956 [58,59] 0.7021 [100] @ 15°	1.4002 [58,59] 1.4072 [43] @ 15°	

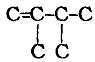
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_4	n^{20}_D	*Additional Data*
3-Methylpentene-2 (Mixtures of *cis* and *trans* isomers) C–C=C–C–C | C		67 to 68 [38] @ 771mm 62 to 65 [51] 64 to 69 [90] 64 to 70 [90] 65 to 69 [90] 65 to 70 [90] 65 to 71 [72] 67.6 to 68.2 [71] 69 [41] 69 to 71 [76] 69 to 71.5 [40] 69.2 to 69.6 [79] 69.3 to 69.7 [94] 69.3 to 69.8 [79] 69.5 to 71 [7] 67 to 69 [49] @ 753mm 68.5 to 69.4 [79] @ 751mm 68.5 to 68.9 [79] @ 740mm 66 to 68 [68] @ 735mm	0.694 [51] D^{20}_{20} 0.6934 [38] D^{20}_{20} 0.698 [7] D^{19}_{19} 0.697 [90] @ 16° 0.693 [90] @ 15° 0.696 [90] @ 15° 0.6984 [72] @ 15° 0.7005 [79] @ 15° 0.7008 [70,72] @ 15° 0.7010 [94] @ 15° 0.7022 [79] @ 15° 0.7055 [40] @ 15° 0.7158 [41] @ 0° 0.7110 [41] D^0_0 0.712 [41] D^0_0	1.4002 [71] 1.4012 [94] 1.402 [41] 1.4022 [90] @ 18° 1.4023 [79] @ 18° 1.4034 [79] @ 18° 1.404 [51] @ 18° 1.4040 [90] @ 16° 1.4060 [79] @ 15° 1.4072 [79] @ 15°	$\frac{dD}{dt} = -0.000678/°C.$ (15° to 25°)

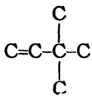
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
***cis* 4-Methylpentene-2**		**58**	**0.6704**		
		57.7 to 58.5 [58] 58.0 to 58.6 [77] 58.2 to 58.6 [61,67]	0.663 [77] @ 24° 0.6709 [58] 0.6735 [61] @ 15°	1.3858 [77] @ 24° 1.3885 [58] 1.3892 [61] $n_{H\alpha}^{15}$ 1.3977 [61] $n_{H\beta}^{15}$ 1.4029 [61] $n_{H\gamma}^{15}$ 1.3916 [61] $n_{He\ yellow}^{15}$ 1.3964 [61] $n_{He\ green}^{15}$	
***trans* 4-Methyl-pentene-2**					
		54.2 to 55.2 [58]	0.6702 [58]	1.3881 [58]	

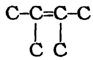
Name and Carbon Skeleton	*M. P., °C*	*B. P., °C. @ 760mm*	D^{20}_4	n^{20}_D	*Additional Data*

4-Methylpentene-2
(Mixtures of *cis* and *trans* isomers)
C–C=C–C–C
          |
          C
		57 to 58.5 [24]
		57.6 to 57.8 [61,67]
		58 to 59 [28]
		58.15 to 59.15 [40]
		58.6 to 59.0 [73]
		57 to 59 [24] @ 740mm
			0.6685 [73] @ 25°
			0.6695 [28] D^{20}_0
			0.6703 [24]
			0.6706 [24]
			0.6734 [61] @ 15°
			0.6874 [28] D^{0}_0
				1.3869 [73] @ 25.3°
				1.3883 [24]
				1.3884 [24]
				1.3888 [61] $n^{15}_{H\alpha}$
				1.3973 [61] $n^{15}_{H\beta}$
				1.4024 [61] $n^{15}_{H\gamma}$
				1.3914 [61] $n^{15}_{He\ yellow}$
				1.3961 [61] $n^{15}_{He\ green}$	

2-Ethylbutene-1
C=C–C–C
    |
    C–C
		66
		64.9 to 65.1 [79]
		66.2 to 66.7 [57,58]
		66.7 to 67.0 [88]
		67 to 68 [42]
		63.9 to 64.1 [79] @ 735mm
			0.6916
			0.69403 [42] @ 20.5°
			0.6899 [79]
			0.6914 [58]
			0.6938 [57]
			0.6948 [79] @ 15°
				1.3991
				1.40276 [42] @ 20.5°
				1.3970 [79]
				1.3990 [57,58]
				1.4000 [79] @ 15°
				1.4021 [88] @ 15°	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2,3-Dimethylbutene-1		**55.8**	**0.6825**	**1.3915**	
	−120 to −123 [60]	56 to 58 [20] @767mm 55.87 [81] @ 762mm 60 to 64 [35] 56 to 58 [11] 56 to 57 [29] 56.0 to 56.5 [58] 56.0 to 56.5 [57] 55.6 to 56.0 [60] 55.0 to 57.5 [58] 55.0 to 57.5 [40] 52 to 56 [82] 55.0 to 55.4 [60] @ 748mm 54 to 58 [64] @ 740mm 55 to 59 [65] @ 740mm 54.7 [69] @ 737mm	0.6803 [58] 0.6810 [60] 0.6827 [57] 0.6874 [82] 0.6795 [11] @ 0°	1.3897 [81] 1.3899 [60] 1.3904 [64,69] 1.3905 [57] 1.3912 [82] 1.3995 [58]	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
3,3-Dimethylbutene-1		**41.2**	**0.6519_8**	**1.3766_0**	$\frac{dD}{dt} = -0.0009077/°C.$ (0° to 20°)
	−114.7[97]	56 to 68[11]	0.6510[60]	1.3709[99] @ 30°	$\frac{dn}{dt} = -0.0005980/°C.$ (−30° to +30°)
		42[16]	0.65295[75]	1.3759[60]	
		41.2[32]	0.6549[32] @ 18°	1.3760[69]	
		41.18[93]	0.67015[75]	1.37630[75]	
		41.0 to 41.2[60]	D_0^0	1.3765[93]	
		40.9 to 42.3[19]	0.6795[11] @ 0°	1.3768[99]	
		40 to 50[82]		1.37667[32] @ 18°	
		40.2 to 40.4[60] @ 747mm		1.3775[64] @ 18°	
		40.2 to 40.25 @ 741mm[69]		1.3850[82] @ 18°	
		40 to 43.5[65] @ 740mm		1.3887[99] @ 0°	
		38 to 43[64] @ 740mm		1.4065[99] @ −30°	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
2,3-Dimethylbutene-2	**−74.2**	**73.3**	**0.7054**	**1.4116 @ 18°**	$\frac{dD}{dt} = -0.000580$/°C. (0° to 20°)
	−76.4 [60] −74.6 [80] −74.2 [81]	72 to 73 [20] @ 767mm 73.39 [81] @ 762mm 73.2 to 73.5 [84] 73 to 74 [15,37] 73 [6,8,40] 72.9 to 73.2 [60] 72 to 75 [11] 72 to 74 [5] 72 to 73.5 [67] 72 [75] 71 to 72 [29] 70 to 73 [19] 70 [3] 69 to 73 [82] 69 to 71 [76] 68 to 74 [89] 68 to 70 [35] 67 to 72 [90] 65 to 73 [89] 72.9 to 73.2 [91] @ 758mm 70 to 71 [31] @ 757mm 70 to 71 [35] @ 754mm 72.3 to 72.6 [60] @ 747mm 69.5 to 72 [65] @ 740mm 69 to 72 [64] @ 740mm 71 to 73 [30] @ 735mm 71.9 [69] @ 732mm	0.7120 [15] 0.7075 [37] D^{20}_{20} 0.7081 [60] D^{20}_{20} 0.6984 [31] D^{20}_{0} 0.7007 [35] D^{20}_{0} 0.70608 [82] D^{20}_{0} 0.698 [89] @ 18° 0.695 [90] @ 15° 0.715 [89] @ 13° 0.7168 [31] D^{0}_{0} 0.7190 [35] D^{0}_{0} 0.7280 [15] @ 0°	1.4100 [89] @ 18° 1.41153 [60] @ 18° 1.41198 [84] @ 18° 1.4121 [64,69] @ 18° 1.4124 [81] @ 18° 1.4072 [90] @ 17° 1.4086 [82] @ 17° 1.4100 [89] @ 15°	

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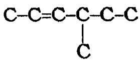
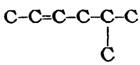
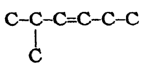
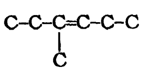
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_4	n^{20}_D	Additional Data
Heptene-1	**−119.1**	**93.1**	**0.6976**	**1.3999**	
C=C-C-C-C-C-C	−119.7 [1]	93.7 to 93.8 [3] @ 771mm	0.6960 [38]	1.3965 [4] @ 25°	
	−119.1 [2]	100 to 105 [59]	0.6970 [5,6]	1.3976 [39]	
	−115 [3]	97 to 99 [58]	0.6972 [6]	1.3991 [5]	
		95 to 100 [73]	0.6973 [3]	1.3992 [6,38]	
		95 to 95.2 [13]	0.6977 [39]	1.3996 [3]	
		95 [71,72]	0.6983 [8]	1.3997 [2]	
		94.9 [11]	0.6992 [7]	1.3999 [5,11,37,42]	
		94.3 [41]	0.6993 [11,42]	1.4000 [6]	
		94 to 95 [10]	0.700 [43] @ 19°	1.4000 [43] @ 19°	
		94 to 94.5 [40]	0.705 [40] @ 19°	1.4027 [7] @ 19°	
		94 to 94.4 [9]	0.739 [58] D^0_0	1.4029 [73] @ 19°	
		93.85 to 93.9 [8]		1.404 [40] @ 19°	
		93.6 to 93.65 [5]		1.3972 [3] $n^{20}_{H\alpha}$	
		93.55 [6]		1.4054 [3] $n^{20}_{H\beta}$	
		93.5 to 95.5 [7]		1.4101 [3] $n^{20}_{H\gamma}$	
		93.5 to 94.5 [39]			
		93.45 [5,6]			
		93.0 [2]			
		92 to 93 [43]			
		93.4 to 93.7 [38] @ 758mm			
		93.06 [2] @ 757mm			
		93.0 [57] @ 750mm			
		94.3 [42] @ 745mm			
***cis* Heptene-2**					
C-C=C-C-C-C-C		98.5 to 99.5 [12]	0.705 [12] @ 25°	1.4052 [12] @ 25°	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
***trans* Heptene-2** C–C=C–C–C–C–C		97.5 to 99 [12]	0.700 [12] @ 26°	1.4056 [12] @ 24°	
Heptene-2 (Mixtures of *cis* and *trans* isomers) C–C=C–C–C–C–C		97.6 [4] 97.6 to 98 [14] 98.1 to 98.4 [11] 98.5 [74] 98.6 to 99.6° [9]	0.7034 [11,14]	1.4021 [4] @ 25° 1.4010 [14] 1.4041 [11]	
***trans* Heptene-3 (?)** C–C–C=C–C–C–C		95.8 [44] @ 768mm	0.7016 [44]	1.39758 [44] @ 40° 1.39934 [44] @ 35° 1.40112 [44] @ 28° 1.40419 [44] @ 20°	$\frac{dn}{dt} = -0.0003233/°C.$ (20° to 40°)

Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C.* @ 760mm	D^{20}_4	n^{20}_D	*Additional Data*
Heptene-3 (Mixtures of *cis* and *trans* isomers) C–C–C=C–C–C–C		93 to 95 [60] 94 [45,46] 95 to 96 [13] 95.5 to 95.7 [15] 95.7 to 96.0 [17] 95.7 to 95.8 [16] 95.8 [18] 95.8 to 96.1 [11] 95.8 to 96.3 [9] 97 to 98 [62] 95.6 [61] @ 746mm	0.7010 [45,46] @ 22° 0.7015 [18] @ 22° 0.7000 [17] 0.7001 [16] 0.7005 [61] 0.7020 [60] D^{20}_{20} 0.7043 [11] D^{20}_{20}	1.4029 [15] @ 24° 1.4041 [16] @ 24° 1.4046 [18] @ 24° 1.4049 [17] @ 24° 1.4062 [13] @ 24° 1.4090 [11] @ 24° 1.4017 [45,46] @ 22°	
2-Methylhexene-1		**91**	**0.7036**	**1.4040**	
C=C–C–C–C–C C		90 to 92 [15] 91.1 to 91.5 [11] 92.8 to 93.5 [13] 94.5 to 95.5 [64] @ 757mm 91.5 to 93 [64] @ 753mm 91 to 92 [63] @ 750mm 93 to 94 [63] @ 749mm	0.7000 [11] 0.7033 [64] 0.7041 [63] 0.7049 [13] 0.7077 [64] @ 15° 0.7080 [63] @ 15° 0.7083 [64] @ 15° 0.7124 [64] @ 15°	1.4068 [15] @ 21° 1.4072 [13] @ 21° 1.4040 [11]	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
3-Methylhexene-1		**84.0**			
C=C-C-C-C-C | C		86 to 87 [19] @ 763mm	0.6945 [11]	1.3970 [11]	
		83.8 to 84.0 [11]	0.6953 [11]		
		84.0 to 84.1 [11]			
4-Methylhexene-1		**87.3**	**0.6969**	**1.3985**	
C=C-C-C-C-C | C		86.8 to 87.3 [9]	0 7110 [9] @ 25°	1.3940 [9] @ 24.9°	
		87.2 to 87.5 [11]	0.6969 [11]	1.3985 [11]	
5-Methylhexene-1		**85**	**0.6925**	**1.3954**	
C=C-C-C-C-C | C		84 to 85 [65] @ 762mm	0.6895 [9] @ 25°	1.3940 [9] @ 24 9°	
		80 to 85 [47]	0.6936 [11]	1.3954 [11]	
		84 to 86 [41]	0.6956 [48] D_{20}^{20}		
		84.7 [11]			
		85 to 86 [60]	0.7160 [60] D_{15}^{15}		
		85.5 to 86.0 [9]	0.7087 [65] @ 0°		

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
2-Methylhexene-2 C–C=C–C–C–C | C		**94.5** 92 to 95 [49] 94.4 to 94.6 [11] 94.5 to 96 [50] 95.1 [20]	**0.7083** 0.7078 [20] 0.7089 [11]	**1.4075** 1.4040 [49] @ 20.5° 1.4075 [11] 1.4100 [20] 1.4049 [49] @ 17.5°	
3-Methylhexene-2 (Mixtures of *cis* and *trans* isomers) C–C=C–C–C–C | C		85 to 90 [66] 90 to 94 [21] 93 to 97 [51] 93.1 to 93.3 [11] 93.5 to 95.3 [51] 95.5 to 97.0 [51] 93.5 to 94.7 [22] @ 740mm	0.7301 [66] @ 25° 0.7117 [51] @ 23° 0.71379 [51] @ 22.5° 0.71229 [51] @ 22.5° 0.7120 [21] 0.714 [21] @ 16° 0.712 [21] @ 16°	1.41319 [66] @ 25° 1.40804 [51] @ 22.8° 1.4099 [51] @ 22.8° 1.4100 [21] @ 22.8° 1.4105 [21] @ 22.8° 1.41070 [51] @ 22.8° 1.4122 [22] @ 22.8°	
4-Methylhexene-2 (High boiling geometrical isomer) C–C=C–C–C–C | C		87.1 to 87.6 [11]	0.7007 [11]	1.3980 [11]	

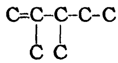
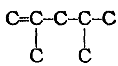
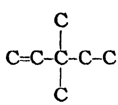
Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
4-Methylhexene-2 (Low boiling geometrical isomer) 		85.1 to 85.6 [11]	0.6981 [11]	1.4000 [11]	
5-Methylhexene-2 (Mixtures of *cis* and *trans* isomers) 		91.1 to 91.6 [11]	0.6990 [11]	1.3990 [11]	
2-Methylhexene-3 (Mixtures of *cis* and *trans* isomers) 		85.6 to 86.1 [11] 86.4 to 86.9 [11]	0.6942 [11] 0.7020 [11]	1.3991 [11] 1.3995 [11]	
3-Methylhexene-3 (Mixtures of *cis* and *trans* isomers) 		88.5 to 88.9 [23] 91 [75] 93 to 96 [50] 93.8 to 94.2 [52] @ 755mm	0.6991 [23] 0.7060 [75] @ 16°	1.4050 [23]	

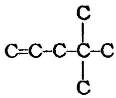
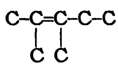
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_4	n^{20}_D	*Additional Data*
2-Ethylpentene-1 C=C–C–C–C | C–C		93.9 to 94.3 [11]	0.7079 [11]	1.4050 [11]	
3-Ethylpentene-1 C=C–C–C–C | C–C		**83.6** 83.4 to 83.6 [23] 85 [45]	0.6948 [45] @ 22° 0.6956 [23]	1.3966 [45] @ 22° 1.3998 [23]	

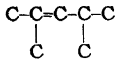
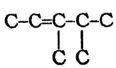
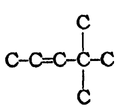
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
3-Ethylpentene-2		**95.2**	**0.7217**	**1.4139**	$\log_{10} P_{mm} = 7.890 - \frac{1849.4}{T}$ (740 to 760mm)

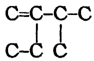
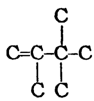
C–C=C–C–C
      |
     C–C
		96 [54] @ 764mm	0.7190 [53] D^{25}_{25}	1.4128 [53] @ 25°	

		97 to 98 [60,76]	0.7191 [54] @ 24.45°	1.4136 [27] @ 25°	
		96 to 100 [25]	0.7172 [11]	1.4139 [54] @ 25°	
		96 to 97 [29]	0.720 [21] @ 15°	1.4140 [27,28] @ 25°	
		96.1 [18]	0.7213 [25,26] @ 15°	1.4120 [11]	
		95.7 to 96.2 [15]	0.7222 [18,28] @ 15°	1.4140 [11] @ 18°	
		95 to 98 [21,25]	0.7223 [27] @ 15°	1.4142 [24,27] @ 18°	
		95 to 97 [50]	0.7228 [27] @ 15°	1.4143 [15] @ 18°	
		95.3 to 95.5 [11]	0.72544 [27] @ 15°	1.40777 @17° [25,26]	
		95.2 [28]	0.718 [21] @ 13°	1.4145 [11] @ 16°	
		94 to 98 [21]		1.4149 [18] @ 16°	
		95.16 [27]			
		95.13 [27]			
		95.08 [27]			
		94.8 to 94.9 [11]			
		95 to 95.5 [53] @ 745mm			
		94.5 to 94.7 [11] @ 743.5mm			
		93.9 to 94.0 [11] @ 740.7mm			
		96 to 97 [24] @ 737mm			
		94 to 95 [24] @ 730mm			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2,3-Dimethylpentene-1		**84**			
		84.1 to 84.4 [11]	0.7054 [11]	1.4022 [11]	
		84.1 to 84.3 [11]	0.722 [30]	1.4130 [30] @ 18°	
		84.0 to 84.4 [11]		1.4160 [30] @ 18°	
		83 to 87.5 [30]			
		80 to 86 [30]			
		83.6 to 84.0 [11] @ 750mm			
		83.4 to 83.6 [11] @ 744mm			
		83.2 to 83.5 [11] @ 740mm			
2,4-Dimethylpentene-1					
		80.9 to 81.3 [11]	0.6937 [11]	1.3970 [11]	
		80.4 to 80.8 [11] @ 748mm			
3,3-Dimethylpentene-1		**77**	**0.6965**	**1.3985**	
		77.1 [20]	0.6961 [34]	1.3980 [20]	
		76.9 [34]	0.6969 [20]	1.3991 [34]	
		76.6 [20] @ 747mm			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
4,4-Dimethylpentene-1		**71.8**		**1.3922**	
	−136.5 [31]	72.63 [31] @ 765mm	0.6883 [9] @ 25°	1.3909 [9] @ 25.2°	
		72.35 [33]	0.6824 [23]	1.3911 [33]	
		71.4 to 71.8 [23]	0.6827 [33]	1.3918 [33]	
		71.2 to 72.4 [9]	0.6828 [23]	1.3919 [31]	
		70.7 to 71.1 [33] @ 724mm	0.7007 [33] D_0^0	1.3930 [23]	
				1.3932 [23]	
2,3-Dimethylpentene-2		**92**	**0.7197**	**1.4146**	$\frac{dD}{dt} = -0.000817/°C.$ (0° to 20°)
		90 to 92 [56]	0.7188 [77] @ 21°	1.413 [56] @ 22°	
		90 to 95 [30]	0.7190 [23]	1.4142 [23]	
		91 to 93 [23]	0.72 [57] @ 22°	1.4150 [23]	
		91 to 94 [30]	0.7203 [23]	1.4180 [30] @ 18°	
		91 to 95 [30]	0.7363 [55] D_0^{20}	1.4195 [30] @ 18°	
		91.8 [33]	0.7242 [30] @ 15°	1.4200 [30] @ 18°	
		92 to 95 [50,78]	0.725 [30] @ 1°		
		93 to 95 [32,55]	0.7355 [77] @ 0°		
		92 to 95 [77] @ 757mm	0.7553 [55] D_0^0		

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_4	n^{20}_D	*Additional Data*
2,4-Dimethylpentene-2 		**83** 81 to 82 [50] 82 to 84 [62,67] 82 to 83 [68] 82.4 to 82.8 [23] 82.4 to 83.0 [23] 82.5 to 83.5 [79] 82.6 [57] 82.9 to 83.4 [9] 84 to 85.5 [69] 85 [80]	**0.6955** 0.6958 [68] @ 22° 0.6947 [57] 0.6954 [23] 0.6958 [23] 0.6978 [69] 0.6985 [80] @ 15° 0.6990 [57] @ 15° 0.7059 [69] @ 0° 0.7139 [68] @ 0°	**1.4015** 1.40165 [68] @ 22° 1.4013 [23] 1.4014 [23] 1.4020 [57] 1.3995 [57] $n^{20}_{H\alpha}$ 1.4082 [57] $n^{20}_{H\beta}$ 1.4134 [57] $n^{20}_{H\gamma}$ 1.4022 [57] $n^{20}_{He\,yellow}$	$\frac{dD}{dt} = -0.0007715$/°C. (0° to 25°)
3,4-Dimethylpentene-2 (Mixtures of *cis* and *trans* isomers) 		85 to 89 [21] 86.2 to 86.4 [11] 88.7 to 89.1 [23]	0.7126 [11] 0.715 [21] @ 15° 0.7186 [23] @ 15°	1.4052 [11] 1.4100 [21] @ 17° 1.4120 [23]	
4,4-Dimethylpentene-2 (Mixtures of *cis* and *trans* isomers) 		84 to 86 [32,55] 76.0 to 76.1 [34] 75.0 to 75.1 [34] @ 739mm	0.6881 [34] 0.7220 [55] D^{20}_0 0.7414 [55] D^0_0	1.3986 [34]	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
3-Methyl-2-ethylbutene-1 		88.4 to 88.8 [11] 88.7 to 89.1 [11] 87.9 to 88.3 [11] @ 748mm 88.2 to 88.5 [11] @ 747mm	0.7186 [11]	1.4120 [11]	
2,3,3-Trimethyl-butene-1		**78**	**0.7029**		$\frac{dD}{dt} = -0.00116/°C.$ (0° to 20°)
		76 to 78 [60] 77 to 79.5 [35] 77.8 to 78.2 [23] 77.9 to 78.1 [23] 78 to 80 [70,81]	0.7023 [23] 0.7073 [70] D_0^{20} 0.7075 [35] @ 15° 0.7101 [23] @ 15° 0.7243 [70] D_0^0	1.4023 [23] 1.4023 [35] @ 15° 1.4059 [23] @ 15°	

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Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Octene-1		**122.5**	**0.7159**	**1.4103**	
C=C-C-C-C-C-C-C	−104[40]	121.85 to 122.15[40] @ 765mm	0.7147[42]	1.4082[27]	
		122.0 to 122.4[30] @ 760.2mm	0.7149[29]	1.4087[39]	
		121.6 to 123.6[30] @ 760.2mm	0.715[39]	1.40880[40]	
		125.1 to 126.1[47]	0.7151[29]	1.4090[29]	
		123 to 124[12]	0.7155[40]	1.4092[42]	
		122 to 125[13]	0.7158[27]	1.4102[54]	
		122 to 124[9,21]	0.7165[57]	1.4128[57]	
		122 to 123[2,19,44]	0.7177[54]	1.4131[30]	
		122 to 122.1[23]	0.718[30]	1.4132[30]	
		122[17]	0.7181[30]	1.408[23] @ 19°	
		121.5 to 122.5[27]	0.716[22] @ 19°	1.4133[12] @ 18°	
		121 to 122[22,57]	0.718[23] @ 19°	1.4145[44] @ 15°	
		120.9 to 121.2[29]	0.7207[12] @ 18°		
		120.8 to 121.2[29]	0.7217[2] @ 17°		
		120.2 to 120.7[42]			
		119.2 to 119.7[42] @ 747mm			
		120.1 to 120.4[29] @ 743mm			
		119.9 to 120.3[29] @ 741mm			
		120 to 121[29] @ 741mm			
		119 to 119.5[39] @ 739mm			

Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D^{20}_4	n^{20}_D	*Additional Data*
***cis* Octene-2**		**123**			
C–C=C–C–C–C–C–C		121 to 122 [56] 125 to 126 [48]	0.9257 [48] @ 24°	1.4119 [48] @ 24°	
Octene-2					
Caprylene (Mixtures of *cis* and *trans* isomers) C–C=C–C–C–C–C–C		125 to 126 [23] 125.0 to 125.3 [29] 125 [1] 124.8 to 125.4 [29] 124.6 to 124.9 [42] 124.2 [66] 123 to 123.5 [44] 123 to 124 [48] 124.1 to 124.7 [29] @ 745mm 123.8 to 124.1 [42] @ 743mm 124.0 to 124.3 [29] @ 740mm 23.5 [45] @ 5.6mm	0.6687 [10] @ 78.8° 0.7127 [44] @ 30° 0.7193 [42] 0.7197 [55] 0.7214 [66] 0.7220 [29] 0.7223 [29] 0.7248 [45] 0.725 [23]	1.4119 [48] @ 24° 1.4155 [44] @ 21.5° 1.41366 [45] 1.4147 [42] 1.4148 [29] 1.4149 [29,66] 1.415 [23]	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C.* @ 760mm	D^{20}_4	n^{20}_D	*Additional Data*
Octene-3 (Mixtures of *cis* and *trans* isomers) C–C–C=C–C–C–C–C		122.7 to 122.9 [29] 121.9 to 122.1 [29] @ 744mm 121.7 to 121.9 [29] @ 741mm	0.7181 [29] 0.7185 [29]	1.4138 [29] 1.4139 [29]	
***cis* Octene-4** C–C–C–C=C–C–C–C	−115 [61]	61.9 [61] @ 97.4mm	0.7186 [61]	1.4111 [61] @ 24.2°	
***trans* Octene-4** C–C–C–C=C–C–C–C	−105 [61]	120.7 [66]	**0.7166** 0.7165 [61] 0.7167 [66]	1.4110 [61] @ 24.2° 1.4131 [66]	
Octene-4 (Mixtures of *cis* and *trans* isomers) C–C–C–C=C–C–C–C		121.9 to 122.3 [29] 122.0 to 122.3 [29] 121.1 to 121.4 [29] @ 742mm 120.9 to 121.3 [29] @ 740mm	0.7184 [29]	1.4140 [29]	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2-Methylheptene-1					

C=C-C-C-C-C-C
  |
  C
		119.2 to 119.5 [29]	0.7203 [29]	1.4122 [29]	

		118.3 to 118.6 [29] @ 743mm			
3-Methylheptene-1		**112**		**1.408**	

C=C-C-C-C-C-C
    |
    C
		111.0 [66]	0.7109 [66]	1.4063 [66]	

		112.6 to 113.0 [55]	0.7185 [55]	1.4099 [55]	
4-Methylheptene-1					

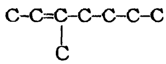
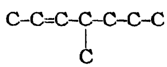
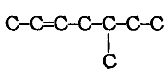
C=C-C-C-C-C-C
      |
      C
		112.6 to 113.0 [42]	0.7183 [42]	1.4099 [42]	

		111.7 to 112.1 [42] @ 740mm			
5-Methylheptene-1					

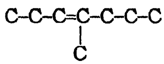
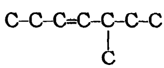
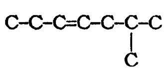
C=C-C-C-C-C-C
        |
        C
		113.1 to 113.4 [42]	0.7164 [42]	1.4094 [42]	

		112.4 to 112.7 [42] @ 744mm			

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C.* @ 760mm	D_4^{20}	n_D^{20}	*Additional Data*
6-Methylheptene-1 C=C-C-C-C-C-C (C branch on 6th C)		**114** 113.5 to 113.9 [42] 113.3 to 113.6 [42] 113 to 115 [20] 111 to 112 [21] 110 [8] @ 750mm 112.7 to 113.0 [42] @ 747mm 112.6 to 113.0 [42] @ 739mm	**0.7133** 0.7125 [21] 0.7135 [42] 0.71845 [8] @ 14.5° 0.7294 [8] @ 0°	**1.407** 1.3986 [21] 1.4083 [42] 1.4085 [42]	$\frac{dD}{dt} = -0.000815$/°C. (0° to 20°)
2-Methylheptene-2 C-C=C-C-C-C-C (C branch on 2nd C)		122.5 to 122.7 [51] 122.3 to 122.7 [55] 121.7 [64] 121 to 122 [60] 120 to 121 [25] 122.4 [18] @ 756mm 123 to 125 [11] @ 755mm 121 [64] @ 746mm 121.5 to 121.7 [51] @ 736mm	**0.7248** 0.728 [25] @ 22° 0.7245 [64] 0.7249 [51] 0.816 [11] 0.7256 [18] D_0^{20}	**1.4172** 1.4169 [18] 1.4170 [51] 1.4175 [64]	

Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
3-Methylheptene-2 (Mixtures of *cis* and *trans* isomers) 		121 to 122 [60] 122.2 to 122.8 [51] 121 [36] @ 750mm 121.4 to 122.0 [51] @ 742mm	0.7304 [51] 0.7308 [55] 0.7296 [36] D^{20}_{20}	1.4183 [36] 1.4190 [60] 1.4197 [51]	
4-Methylheptene-2 (Mixtures of *cis* and *trans* isomers) 		113.2 to 113.4 [42] 113.8 to 114.1 [47] 112.1 to 112.5 [42] @ 740mm	0.7188 [47] @ 25° 0.7145 [42]	1.4100 [47] @ 25° 1.4110 [42]	
5-Methylheptene-2 (Mixtures of *cis* and *trans* isomers) 		117.2 to 117.6 [55]	0.7202 [55]	1.4120 [55]	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
6-Methylheptene-2 (Mixtures of *cis* and *trans* isomers) C–C=C–C–C–C–C with C on the sixth carbon		116.3 to 117.3 [42] 117.4 to 117.8 [55] 115.4 to 116.4 [42] @ 739mm	0.7179 [55] 0.7188 [42]	1.4120 [42] 1.4122 [55]	
2-Methylheptene-3 (Mixtures of *cis* and *trans* isomers) C–C–C=C–C–C–C with C on the second carbon		111.7 to 112.2 [29] 120.4 [15] 110.8 to 111.3 [29] @ 741mm	0.7059 [29] 0.7314 [15]	1.4070 [29]	
3-Methylheptene-3 (Mixtures of geometrical isomers) C–C–C=C–C–C–C with C on the third carbon		121.1 [65]	0.7280 [65]	1.4180 [65]	

Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
4-Methylheptene-3 (Mixtures of geometrical isomers) 		115 to 120 [14] 120.4 [4] 122.4 [55]	0.71746 [4] D_0^{35} 0.72287 [4] D_0^{30} 0.7411 [14] @ 25° 0.7255 [55] 0.73138 [4] D_0^{20} 0.73246 [4] D_{20}^{20}	1.4169 [55] 1.41712 [14] @ 25°	
5-Methylheptene-3 (Mixtures of *cis* and *trans* isomers) 		111.7 to 112.3 [29] 110.4 to 111.0 [29] @ 732mm	0.7118 [29]	1.4097 [29]	
6-Methylheptene-3 (Mixtures of *cis* and *trans* isomers) 		111.5 to 112.5 [5] 114.2 to 114.7 [29] 113.1 to 113.6 [29] @ 737mm	0.7121 [29]	1.4103 [29]	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data

2-Ethylhexene-1
C=C-C-C-C-C
   |
   C-C
		120
		116 to 118 [41]
		120.5 [29]
		121.1
		119.6 to 120.2 [29] @ 742mm
			0.7274 [29]
			0.7283 [29] @ 16°
				1.4207
				1.4158 [62] @ 30°
				1.4207 [62]
				1.4161 [29]
				1.4180 [41] @ 12°
				1.4305 [62] @ 0°
				1.4452 [62] @ −30°
					$\frac{dn}{dt} = -0.00049/°C.$ (−30° to 30°)

3-Ethylhexene-1
C=C-C-C-C-C
      |
      C-C
		107.7 to 111.7 [29]
		110.0 to 111.0 [29]
		109.1 to 110.1 [29] @ 741mm
		106.6 to 110.6 [29] @ 737mm
			0.7134 [29]
			0.7140 [29]
				1.4068 [29]
				1.4072 [29]	

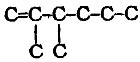
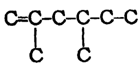
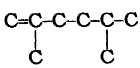
4-Ethylhexene-1
C=C-C-C-C-C
         |
         C-C
		110 to 111 [55]	0.7134 [55]	1.4068 [55]	

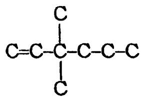
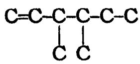
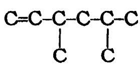
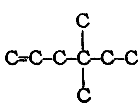
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data

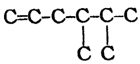
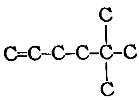
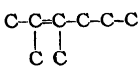
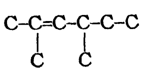
3-Ethylhexene-2
(Mixtures of geometrical isomers)
C–C=C–C–C–C
    |
    C–C
		119.6 to 120.5 [15] @ 769mm
		120.1 to 121.1 [51]
		119.4 [3]
		119.2 to 120.1 [15]
		119 to 122 [26]
		119 to 120 [7]
		119.5 to 120.5 [51] @ 745mm
			0.72074 [3] D_0^{35}
			0.72598 [3] D_0^{30}
			0.73657 [3]
			0.7367 [51]
			0.73754 [3] D_{20}^{20}
				1.4246 [51]	

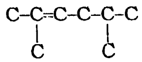
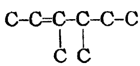
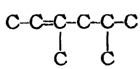
4-Ethylhexene-2
(Mixtures of *cis* and *trans* isomers)
C–C=C–C–C–C
      |
      C–C
		112.4 to 112.6 [42]
		112.0 to 112.2 [42] @ 750mm
			0.7138 [42]	1.4108 [42]	

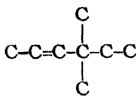
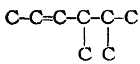
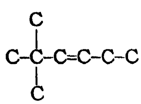
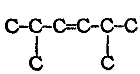
3-Ethylhexene-3
C–C–C=C–C–C
    |
    C–C
		112.5 to 113.0 [55] @ 751mm	0.7144 [55]	1.4149 [55]	

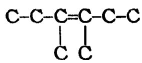
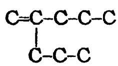
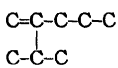
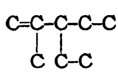
Name and Carbon Skeleton	M. P.,°C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2,3-Dimethylhexene-1 		**110.5** 110.3 to 110.8 [65] 110.6 to 110.8 [50] 110.8 [50] 110.0 [50] @ 743mm 109.6 to 109.8 [50] @ 738mm	**0.723** 0.7222 [50] 0.7250 [65]	**1.412** 1.4104 [50] 1.4117 [50] 1.4153 [65]	
2,4-Dimethylhexene-1 		111.0 to 111.3 [50] 110.2 to 110.5 [50] @ 743mm	0.7191 [50]	1.4107 [50]	
2,5-Dimethylhexene-1 		111.6 [50] 111.6 to 112.6 [50] 111.1 [50] @ 748mm 111.0 to 112.0 [50] @ 746mm	0.7172 [50] 0.7194 [50]	1.4106 [50] 1.4117 [50]	

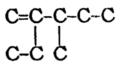
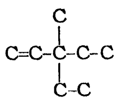
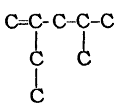
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
3,3-Dimethylhexene-1				**1.4067**	
		104.0 [64] 105.8 [65]	0.7143 [64,65]	1.4065 [65] 1.4070 [64]	
3,4-Dimethylhexene-1					
		113.0 to 113.5 [42] 112.2 to 112.7 [42] @ 742mm	0.7240 [42]	1.4145 [42]	
3,5-Dimethylhexene-1					
		105.0 to 105.8 [42] 104.4 to 105.2 [42] @ 746mm	0.7087 [42]	1.4050 [42]	
4,4-Dimethylhexene-1					
		107.0 to 107.5 [42] 106.2 to 106.7 [42] @ 742mm	0.7198 [42]	1.4102 [42]	

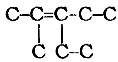
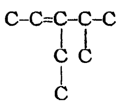
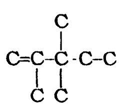
Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D^{20}_4	n^{20}_D	*Additional Data*
4,5-Dimethylhexene-1 		107.8 to 108.8 [65]	0.7382 [65]	1.4152 [65]	
5,5-Dimethylhexene-1 		101.8 [65]	0.7132 [65]	1.4055 [65]	
2,3-Dimethylhexene-2 		**119** 114 to 118 [58] 114 to 119 [58] 119 to 119.5 [60] 120.2 [65]	**0.7392** 0.7392 [65] 0.7364 [58] @ 16° 0.736 [58] @ 15°	**1.4271** 1.4270 [58] 1.4272 [58] 1.4238 [65] @ 18° 1.4225 [60] @ 18°	
2,4-Dimethylhexene-2 		**110** 108.9 to 109.0 [60] 110.1 to 110.5 [65]	**0.727** 0.7223 [60] 0.7322 [65]	1.3990 [65] 1.4144 [60]	

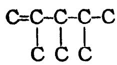
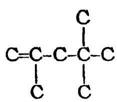
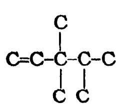
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760m*	D_4^{20}	n_D^{20}	*Additional Data*
2,5-Dimethylhexene-2 		**112** 112.0 to 112.2 [51] 112.3 [64] 111.3 to 111.5 [51] @ 744mm 111 [36] @ 739mm	**0.7209** 0.7190 [64] 0.7202 [51] 0.7265 [36] D_{20}^{20}	**1.4143** 1.4135 [36] 1.4144 [64] 1.4146 [51]	
3,4-Dimethylhexene-2 (Mixtures of *cis* and *trans* isomers) 		115.3 to 115.6 [60] 115 to 116 [46] @ 756mm	0.7294 [60] 0.7315 [60] 0.7438 [60] 0.7521 [46] @ 0°	1.4152 to 1.4156 [49] @ 25° 1.4139 [60] 1.4175 [60] 1.4192 [46]	
3,5-Dimethylhexene-2 (Mixtures of *cis* and *trans* isomers) 		108 to 111 [60] 109.1 [55] 112.5 to 113 [51] 109 [36] @ 737mm 111.4 to 111.9 [51] @ 735mm	0.7313 [55] 0.7242 [51] 0.7313 [36] D_{20}^{20}	1.4148 [60] 1.4160 [36,55] 1.4162 [51]	

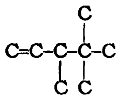
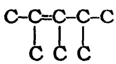
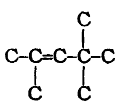
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
4,4-Dimethylhexene-2 (Mixtures of *cis* and *trans* isomers) 		105.4 to 106.0 [37]; 103.5 to 104.1 [37] @ 739mm	0.7202 [37]	1.4120 [37]	
4,5-Dimethylhexene-2 (Mixtures of *cis* and *trans* isomers) 		109.5 to 110.0 [42]; 108.6 to 109.1 [42] @ 740mm	0.7200 [42]	1.4132 [42]	
2,2-Dimethylhexene-3 (Mixtures of *cis* and *trans* isomers) 		100.1 [37]; 99.0 [37] @ 750.5mm	0.7048 [37]	1.4068 [37]	
2,5-Dimethylhexene-3 (Mixtures of *cis* and *trans* isomers) 		102.0 to 102.1 [65]	0.7124 [65]	1.4030 [65]	

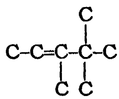
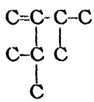
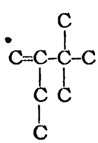
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
3,4-Dimethylhexene-3 (Mixtures of *cis* and *trans* isomers) 		113.5 [24]			
2-Propylpentene-1 		117.7 [50] 117.3 [50] @ 751mm	0.7240 [50]	1.4136 [50]	
2-Isopropylpentene-1 		111.7 to 112.0 [50] 110.8 to 111.1 [50] @ 741mm	0.7212 [50]	1.4117 [50]	
2-Methyl-3-ethylpentene-1 		109.0 to 110.0 [50] 107.9 to 108.9 [50] @ 737mm	0.7262 [50]	1.4140 [50]	

Name and Carbon Skeleton	M. P.,°C.	B. P.,°C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
3-Methyl-2-ethylpentene-1		**112.5**	**0.7294**		
		112.5 to 112.7 [50] 111.4 to 113 [63] 111.8 to 112.0 [50] @ 745mm	0.7288 [50] 0.7300 [63]	1 4142 [50,63]	
3-Methyl-3-ethylpentene-1					
		110.3 to 111.7 [63]	0.7197 [63]	1.4120 [63]	
4-Methyl-2-ethylpentene-1		**111**	**0.7195**	**1.4111**	
		110.2 to 110.4 [50] 110.4 to 111.7 [32] 109.6 to 110.9 [32] @ 744mm 109.3 to 109.5 [50] @ 741mm	0.7192 [50] 0.7197 [29]	1.4102 [50] 1.4120 [29]	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2-Methyl-3-ethylpentene-2		**117**	**0.7390**	**1.4246**	
		113 to 116.5 [58] 116.8 to 117.3 [65] 114.5 to 116.5 [6] @ 741mm	0.7390 [65] 0.7385 [6] D_{20}^{20} 0.7388 [58] @ 16° 0.7535 [6] D_0^0	1.4246 [65] 1.4215 [58] @ 17°	
4-Methyl-3-ethylpentene-2					
(Mixtures of geometrical isomers) 		114.5 to 116.5 [55] @ 741mm			
2,3,3-Trimethylpentene-1		**108**	**0.734**	**1.4184**	
		107.8 to 108.4 [50] 108.2 [38] 111.4 to 112.4 [65] 107.2 to 107.8 [50] @ 747mm 106 to 106.7 [34] @ 742mm	0.7305 [65] 0.7363 [38] 0.739 [50]	1.4178 [38] 1.4179 [34] 1.4180 [65] 1.4200 [50]	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2,3,4-Trimethyl-pentene-1 		106.7 to 107.7 [50] 106 0 to 107.0 [50] @ 744mm	0.726 [50]	1.4146 [50]	
2,4,4-Trimethyl-pentene-1 	**−93.7** −94.2 [52] −93.6 [37]	**101.5** 101.56 to 101.58 [59] @ 765mm 102 [43] @ 765mm 101 to 102 @ 765mm [43] 101.2 [31,32] 101.2 to 101.3 [28] 101.5 [35] @ 738mm 100.1 [37] @ 737mm 100.1 to 100.2 [28] @ 736mm	**0.7164** 0.710 [28] 0.7151 [31] 0.7167 [43] 0.7179 [43]	**1.4089** 1.408 [28] 1.4082 [31,32] 1.4084 [35] 1.4089 [59] 1.4100 [43] 1.4103 [43]	
3,3,4-Trimethyl-pentene-1 		105.4 [64]	0.7287 [64]	1.4140 [64]	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_4	n^{20}_D	Additional Data
3,4,4-Trimethyl-pentene-1					
		104.9 to 105.6 [42] 104.2 to 104.9 [42] @ 743mm	0.7185 [42]	1.4128 [42]	
2,3,4-Trimethyl-pentene-2		**115**		**1.423**	
		110 to 115 [58] 113.8 to 114.5 [65] 114.3 [33] @ 739mm	0.7325 [65] 0.742 [58] @ 13°	1.4199 [65] 1.4263 [33] 1.4268 [58] @ 15°	
2,4,4-Trimethyl-pentene-2	**−107**	**104.5**	**0.722**	**1.4159**	
	−108.3 [31] −107.1 [52] −106.5 [31]	104.84 [59] @ 765mm 104 to 105 [43] 104.1 to 104.5 [28] 104.5 [31] 104.8 to 105.0 [60] 103.4 [31] @ 737mm 103.0 to 103.4 [28] @ 736mm	0.715 [28] 0.7211 [31] 0.7293 [60]	1.415 [28] 1.4158 [31] 1.4159 [59] 1.4160 [60]	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_4	n^{20}_D	Additional Data
3,4,4-Trimethyl-pentene-2					
(Mixtures of *cis* and *trans* isomers) 		108 to 113 [53] 111.2 to 111.5 [60] 111.9 [38] 109 [34] @ 740mm	0.7395 [38] 0.7401 [60] 0.7473 [53] @ 15°	1.4190 [60] 1.4232 [34,38] 1.4277 [53] @ 15°	
3-Methyl-2-Isopropylbutene-1		**103**		**1.4081**	
		103.3 [50] 101.9 [33] @ 741mm 102.4 to 102.5 [50] @ 741mm	0.7172 [50]	1.4079 [50] 1.4083 [33]	
3,3-Dimethyl-2-ethylbutene-1					
		110.4 to 110.8 [16]			

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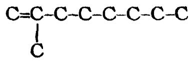
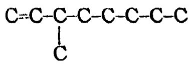
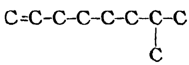
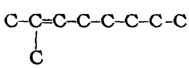
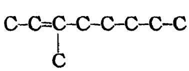
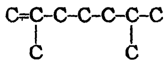
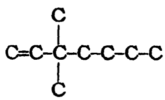
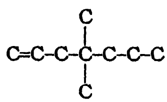
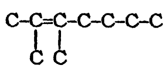
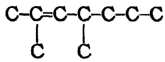
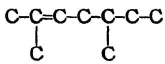
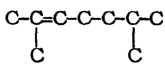
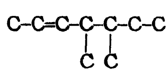
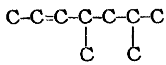
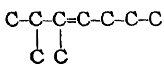
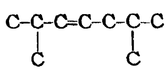
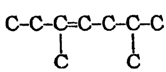
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Nonene-1		**146**	**0.7308**	**1.4161**	
C=C-C-C-C-C-C-C-C		145.0 to 145.6 [17] 145.3 to 145.8 [25] 146 [13] 39.5 [24] @ 3mm	0.730 [13] @ 21° 0.7302 [24] 0.7315 [17]	1.414 [13] @ 21° 1.41600 [24] 1.4163 [17]	
***cis* Nonene-2**					
C-C=C-C-C-C-C-C-C		148.5 [25]	0.738 [13] @ 21°	1.420 [13] @ 21°	
Nonene-2					
(Mixtures of *cis* and *trans* isomers) C-C=C-C-C-C-C-C-C		147 to 148 [3,4] 153 to 154 [5] @ 768mm	0.8371 [5]		
Nonene-4					
(Mixtures of *cis* and *trans* isomers) C-C-C-C=C-C-C-C-C		143 to 145 [11] 147 to 148 [35] 147.5 to 148.1 [25] 44 to 46 [15] @ 12mm	0.7287 [15] @ 22° 0.7394 [11] 0.732 [35] @ 18°	1.4185 [15] @ 22° 1.421 [35] @ 18°	

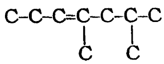
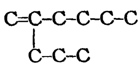
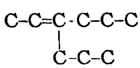
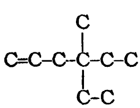
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
2-Methyloctene-1 		**143** 140 to 144 [2] 141.5 to 143 [2] 143.1 [33]	0.7346 [33] 0 7318 [2] D^{11}_{11}	1.4190 [33]	
3-Methyloctene-1 		136.3 [34]	0.7249 [34]	1.4130 [34]	
7-Methyloctene-1 		138.1 [33]	0.7252 [33]	1.4133 [33]	
2-Methyloctene-2 		**146** 145 to 146 [26] 146.2 [31]	0.7385 [31]	1.4240 [26] @ 21° 1.4240 [31]	
3-Methyloctene-2 (Mixtures of *cis* and *trans* isomers) 		143 to 145 [20] @ 734mm 64.5 to 65 [26] @ 14mm	0.7409 [20] @ 25° 0.759 [26] @ 23°	1.4268 [26] @ 23° 1.4247 [20]	

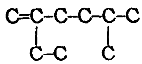
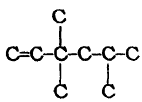
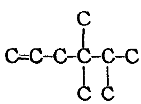
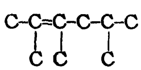
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C.* @ 760mm	D_4^{20}	n_D^{20}	*Additional Data*
4-Methyloctene-2 (Mixtures of *cis* and *trans* isomers) C–C=C–C–C–C–C–C | C (on 4th C)		137.3 to 137.9 [25]	0.7286 [25] @ 25°	1.4158 [25] @ 24.8°	
4-Methyloctene-4 (Mixtures of *cis* and *trans* isomers) C–C–C–C=C–C–C–C | C (on 4th C)		133 to 138 [6] 136 to 144 [16]	0.7388 [6] @ 25° 0.7495 [16] D_{20}^{20}	1.41781 [6] @ 25° 1.4228 [16]	
3-Ethylheptene-3 C–C–C=C–C–C–C | C–C (on 3rd C)		140 to 141 [12] @ 759mm	0.7477 [12]	1.42765 [12]	
4-Ethylheptene-3 (?) (Mixtures of *cis* and *trans* isomers) C–C–C=C–C–C–C | C–C (on 4th C)		138 to 145 [28]			

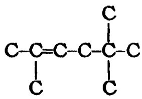
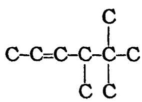
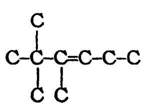
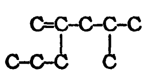
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2,6-Dimethylheptene-1 		135.3 [33]	0.7299 [33]	1.4168 [33]	
3,3-Dimethylheptene-1 		128.8 [31]	0.7295 [31]	1.4145 [31]	
4,4-Dimethylheptene-1 		130.0 to 130.7 [32] @ 740mm 130.7 to 131.4 [32]	0.7489 [32]	1.4175 [32]	
2,3-Dimethylheptene-2 		136.2 to 136.8 [22] @ 743mm 145 to 146 [30]	0.742 [22]	1.4233 [22] 1.4310 [30]	

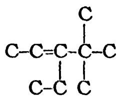
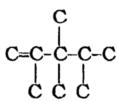
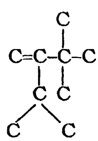
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
l-2,4-Dimethyl-heptene-2 		134 to 136 [18]			
d-2,5-Dimethyl-heptene-2 		138 [19]			$[\alpha]_D^{25} = +2.39°$ [19] $[M]_D^{25} = +3.02°$ [19]
2,6-Dimethylheptene-2 		**139** 138.9 [31] 142 to 143 [14]	0.7336 [31] 0.768 [14] @ 14°	1.4224 [31] 1.4321 [14] @ 14°	
4,5-Dimethylheptene-2 (Mixtures of *cis* and *trans* isomers) 		135.0 to 136.1 [25]	0.7431 [25] @ 25°	1.4220 [25] @ 24.8°	

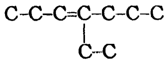
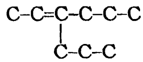
Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
4,6-Dimethylheptene-2 (Mixtures of *cis* and *trans* isomers) 		129.5 to 130.1 [25]	0.7239 [25] @ 25°	1.4135 [25] @ 25°	
2,3-Dimethylheptene-3 (Mixtures of geometrical isomers) 		138.4 to 138.8 [22] @ 740.5mm	0.747 [22]	1.4250 [22]	
2,6-Dimethylheptene-3 (Mixtures of *cis* and *trans* isomers) 		132 to 134 [10]			
3,6-Dimethylheptene-3 (Mixtures of geometrical isomers) 		137 [21] @ 747mm	0.7382 [21] D_{20}^{20}	1.4217 [21]	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
4,6-Dimethylheptene-3 (Mixtures of geometrical isomers) 		131 [21] @ 749mm	0.7358 [21] D_{20}^{20}	1.4198 [21]	
2-Propylhexene-1 		142 to 144 [7] @ 768mm			
3-Propylhexene-2 		138 to 142 [29]	0.747 [29] @ 13°	1.4300 [20] @ 18°	
4-Methyl-4-ethylhexene-1 		135.0 to 136.5 [32]	0.7467 [32]	1.4230 [32]	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
5-Methyl-2-ethylhexene-1 		139 to 140 [8]			
3,3,5-Trimethylhexene-1 		121.5 [31]	0.7280 [31]	1.4139 [31]	
4,4,5-Trimethylhexene-1 		133.7 to 134.7 [32]	0.7528 [32]	1.4230 [32]	
2,3,5-Trimethylhexene-2 		125 [21] @ 741mm	0.7340 [21] D^{20}_{20}	1.4180 [21]	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_4	n^{20}_D	*Additional Data*
2,5,5-Trimethyl-hexene-2 		126.7 [31]	0.7335 [31]	1.4210 [31]	
4,5,5-Trimethyl-hexene-2 (Mixtures of *cis* and *trans* isomers) 		128.7 to 129.5 [25]	0.7382 [25] @ 25°	1.4198 [25] @ 24.9°	
2,2,3-Trimethyl-hexene-3 (Mixtures of geometrical isomers) 		130 to 132 [27]	0.7493 [27] @ 15°	1.4312 [27] @ 15°	
4-Methyl-2-propylpentene-1 		132 to 133 [157]			

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
4,4-Dimethyl-3-ethylpentene-2					
(Mixtures of geometrical isomers) 		124 to 132 [27]	0.7533 [27] @ 15°	1.4300 [27] @ 15°	
2,3,3,4-Tetramethyl-pentene-1					
		132.6 [23] @ 743mm	0.761 [23]	1.4305 [23]	
3,3-Dimethyl-2-isopropylbutene-1					
		121.6 [23] 122 to 133 [27]	0.737 [23] 0.7545 [27] @ 13°	1.4175 [23] 1.4260 [27] @ 17°	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_4	n^{20}_D	Additional Data
4-Ethylheptene-3 (?) or 3-Propylhexene-2 (?)  or 		139.5 [1]	0.72990 [1] D^{35}_0 0.73449 [1] D^{30}_0 0.74333 [1] D^{20}_0 0.74443 [1] D^{20}_{20}		

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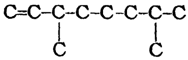
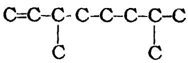
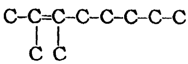
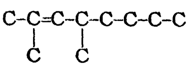
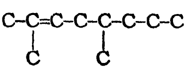
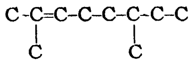
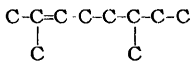
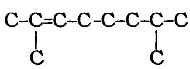
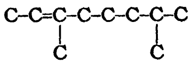
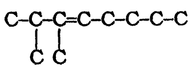
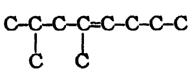
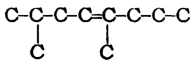
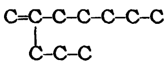
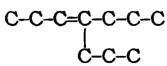
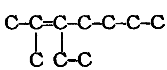
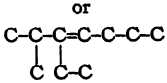
Name and Carbon Skeleton	M. P.,°C.	B. P.,°C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Decene-1 C=C-C-C-C-C-C-C-C-C		**171** 170.4 to 170.8 [37] 172 [4,9] 106 to 107 [4] @ 100mm 87 to 88 [4] @ 50mm 61.5 [4] @ 15mm 60 to 61 [9] @ 12mm 53.5 [36] @ 3mm	**0.743₉** 0.7398 [4] @ 30° 0.7421 [36] 0.7512 [4] @ 15° 0.7630 [4] @ 0°	1.42170 [36]	$\log_{10} P_{mm} = \frac{-2272.08555}{T} + 7.98547$ [4] (15 to 760mm) $\frac{dD}{dt} = -0.000875$/°C. (0° to 30°)
Decene-3 (?) (Mixtures of *cis* and *trans* isomers) C-C-C=C-C-C-C-C-C-C		160 [2]			
Decene-5 (Mixtures of *cis* and *trans* isomers) C-C-C-C-C=C-C-C-C-C		149.3 [44]	0.7331 [44]	1.4212 [44]	

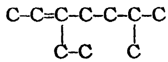
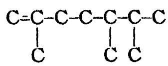
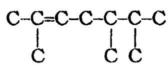
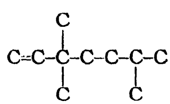
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_{4}	n^{20}_{D}	Additional Data
4-Methylnonene (3 or 4) (Mixtures of geometrical isomers are possible in either case) C-C-C=C-C-C-C-C-C | C or C-C-C-C=C-C-C-C-C | C		161 to 164 [25] 161 to 163.5 [28] @ 734mm 58 to 59 [28] @ 15mm	0.7483 [28] @ 25°	1.4293 [29]	
2-Ethyloctene-1 (?) C=C-C-C-C-C-C-C | C-C		60 @ 15mm [9]			
3-Ethyloctene-2 (Mixtures of geometrical isomers) C-C=C-C-C-C-C-C | C-C		57 to 59 [28] @ 15mm	0.7545 [28] @ 25°	1.4303 [28]	
***d*-2,6-Dimethyloctene-1** C=C-C-C-C-C-C-C | | C C		162 [14] @ 743mm	0.7558 [14]	1.4303 [14]	$[\alpha]^{20}_{D} = +9.06°$ [14]

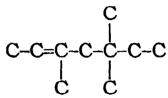
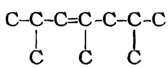
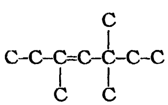
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
l-3,7-Dimethyloctene-1 		154 [23] 45 to 46 [23] @ 13mm	0.7321 [23]	1.4176 [23]	$[\alpha]_D^{20} = -12.38°$ [23]
3,7-Dimethyloctene-1 		152 to 155 [13] 154 [24] @ 738mm	0.7396 [24] 0.744 [13] @ 19°	1.4212 [24] 1.4213 [13] @ 19°	
2,3-Dimethyloctene-2 		158.4 to 158.8 [30] @ 733mm		1.4280 [30]	
l-2,4-Dimethyloctene-2 		62 @ 30mm [26]			$[M]_D^{24} = -5.04°$ [26]
d-2,5-Dimethyloctene-2 		162 [27]			$[\alpha]_D^{24} = +1.31°$ [27] $[M]_D^{24} = +1.83°$ [27]

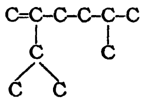
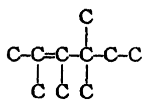
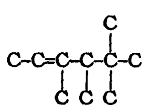
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_4	n^{20}_D	*Additional Data*
d-2,6-Dimethyloctene-2			**0.7522**		$[\alpha]^{20}_D = +9.28°$ [10]
		164 to 165 [16] @ 782mm 163.5 to 164 [10] 164.5 [10] @ 756mm	0.7515 [10] D^{20}_0 0.7521 [16] D^{20}_0 0.7533 [10] D^{20}_0	1.4293 [10] 1.4304 [10]	$[\alpha]^{20}_D = +4.39°$ [10]
2,6-Dimethyloctene-2		**163**			
		162 to 163 [40] 163 to 164 [15] @ 757mm 65 to 66 [41] @ 17mm	0.746 [41] @ 22° 0.7527 [15] D^{20}_0	1.425 [41] @ 22° 1.4286 [15]	
2,7-Dimethyloctene-2					
		163.7 [3] @ 744mm 159 to 162 [7] @ 650mm	0.7387 [1] D^{20}_{20} 0.7475 [7] D^{20}_0		

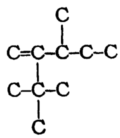
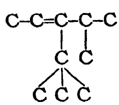
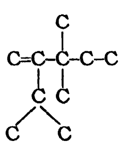
Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
3,7-Dimethyloctene-2 (Mixtures of *cis* and *trans* isomers) 		163 [19] 162 to 163 [19,20] 162 [17] 161 to 162 [24] @ 753mm 161 [32] @ 744mm	0.7458 [22] @ 25° 0.7470 [19] @ 25° 0.7475 [19] @ 21° 0.7490 [19] 0.7508 [20] 0.7473 [24]	1.4259 [22] @ 25° 1.4272 [24]	
2,3-Dimethyloctene-3 (Mixtures of geometrical isomers) 		161.2 to 161.4 @ 739mm [30]		1.4290 [30]	
2,4-Dimethyloctene-4 (Mixtures of geometrical isomers) 		154 [29] @ 752mm	0.7497 [29] D^{20}_{20}	1.4256 [29]	

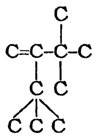
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2,5-Dimethyloctene-4 (Mixtures of geometrical isomers) 		152 to 157 [12]	0.7460 [12] @ 25°	1.41889 [12] @ 25°	
2-Propylheptene-1 		53 to 54 [21] @ 11mm			
4-Propylheptene-3 		160 to 162 [32] @ 734mm 65 to 96 [32] @ 15mm		1.4386 [32]	
2-Methyl-3-ethylheptene (2 or 3) (Mixtures of geometrical isomers are possible if compound is 2-Methyl-3-ethylheptene-3)  or 		155 to 157 [18]	0.7570 [18]	1.4302 [18]	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
6-Methyl-3-ethylheptene-2 (Mixtures of geometrical isomers) 		157 to 158 [8] @ 750mm	0.7520 [8] @ 11.4° 0.7609 [8] @ 0°	1.42708 [8] @ 11.4°	
2,5,6-Trimethyl-heptene (1 or 2)  or 		159.5 to 161 [11]	0.7575 [11] @ 19°	1.4315 [11] @ 19°	
3,3,6-Trimethyl-heptene-1 		155 [6]	0.7705 [6] @ 0°		

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
3,5,5-Trimethyl-heptene-2 (Mixtures of *cis* and *trans* isomers) 		116.8 [35] @ 215mm		1.4375 [35] @ 25°	
2,4,6-Trimethyl-heptene-3 (Mixtures of geometrical isomers) 		142 [29] @ 740mm	0.7355 [29] D_{20}^{20}	1.4208 [29]	
3,5,5-Trimethyl-heptene-3 (Mixtures of geometrical (isomers) 		157 to 157.5 [5] @ 759mm	0.7729 [5] D_{21}^{21} 0.7878 [5] D_0^0		$\frac{dD}{dt} = -0.000776/°C.$ (0 to 20° C.)

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
5-Methyl-2-isopropyl-hexene-1 		150 [33]	0.7387 [33] @ 24°	1.4202 [33] @ 24°	
2,3,4,4-Tetramethyl-hexene-2 		45 to 50 [46] @ 15mm	0.76970 [3] @ 20.1° 0.77135 [3] @ 18.1° 0.77263 [3] @ 16.4° 0.77414 [3] @ 14.3°	1.4385 [3] @ 17°	$\frac{dD}{dt} = -0.000764$/°C. (14° to 20°)
3,4,5,5-Tetramethyl-hexene-2 (Mixtures of *cis* and *trans* isomers) 		110.8 [35] @ 215mm		1.4340 [35] @ 25°	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
3-Methyl-2-*tert*-butylpentene-1 		146 to 150 [43]	0.767 [43] @ 11°	1.4306 [43] @ 17°	
4-Methyl-3-*tert*-butylpentene-2 (Mixtures of geometrical isomers) 		153 to 158 [39]	0.7791 [39]	1.4370 [39]	
3,3-Dimethyl-2-isopropylpentene-1 		152 to 156 [43]	0.772 [43] @ 16°	1.4370 [43] @ 17°	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
3,3-Dimethyl-2-*tert*-butylbutene-1		**150**	**0.770**	**1.4364**	
		147 to 155 [38, 42] 149.5 [31]	0.770 [31] 0.7820 [38] @ 19° 0.7824 [42] @ 19°	1.4364 [31] 1.4374 [38,42]	

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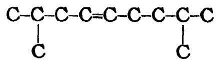
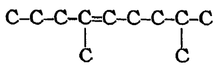
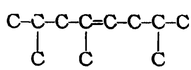
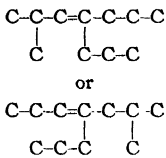
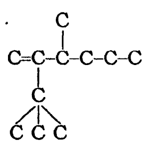
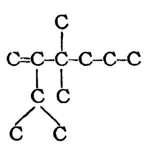
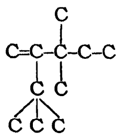
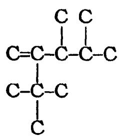
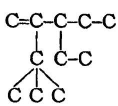
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Undecene-1 C=C–(C)₈–C		188 to 190 [6] 84 @ 18mm [1]	0.7630 [6]	1.4284 [6]	
Undecene-2 (Mixtures of *cis* and *trans* isomers) C–C=C–(C)₇–C		192 to 193 [2] 78.5 [3] @ 14mm			
5-Methyldecene-4 (Mixtures of geometrical isomers) C–C–C–C=C(–C)–C–C–C–C–C		75 to 76 [9] @ 15mm	0.7578 [9] @ 25°	1.4333 [9]	
***l*-2,4-Dimethylnonene-2** C–C(–C)=C–C(–C)–C–C–C–C–C		79 @ 30mm [7]			$[M]_D^{24} = -4.76°$ [7]
***l*-2,5-Dimethylnonene-2** C–C(–C)=C–C–C(–C)–C–C–C–C		113 [8] @ 100mm			$[\alpha]_D^{25} = -0.58°$ $[M]_D^{25} = -0.89°$ [8]

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2,8-Dimethylnonene-4 (Mixtures of *cis* and *trans* isomers) 		57 to 63 [11] @ 13mm	0.743 [11]	1.4211 [11]	
4,8-Dimethylnonene-4 (Mixtures of geometrical isomers) 		165 to 165 [4]	0.75301 [4] @ 25°	1.42776 [4] @ 25°	
2,4,7-Trimethyl-octene-4 (Mixtures of *cis* and *trans* isomers) 		168 [10] @ 739mm	0.7539 [10] D_{20}^{20}	1.4280 [10]	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2-Methyl-4-propyl-heptene-3 or 6-Methyl-4-propyl-heptene-3 (Mixtures of geometrical isomers are possible if compound is 6-methyl-4-propylheptene-3) 		180 to 183 [5]	0.7710 [5] @ 15°	1.433 [5] @ 15°	
3-Methyl-2-*tert*-butylhexene-1 		169 to 174 [13]	0.774 [13] @ 13°	1.4360 [13] @ 15°	
3,3-Dimethyl-2-iso-propylhexene-1 		171 to 174 [13]	0.873 [13] @ 9°	1.4380 [13] @ 15°	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C.* @ 760mm	D_4^{20}	n_D^{20}	*Additional Data*
3,3-Dimethyl-2-*tert*-butylpentene-1 		176 to 181 [12]	0.799 [12] @ 15°	1.4518 [12] @ 17°	
3,4-Dimethyl-2-*tert*-butylpentene-1 		167 to 171 [13]	0.781 [13] @ 16°	1.4415 [13] @ 18°	
3-Ethyl-2-*tert*-butylpentene-1 		168 to 172 [13]	0.783 [13] @ 16°	1.4412 [13] @ 17°	

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Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Dodecene-1		**213**	**0.7600**	**1.4327**	$\frac{dD}{dt} = -0.0007204$/°C. (0° to 100°)
C=C–(C)$_9$–C	−31.5 [6] −31 [6]	213 [38] 96 @ 15mm [6] 95.5 [26] @ 15mm 90 to 91 [30] @ 13mm 86.5 [37] @ 3mm	0.7024 [38] @ 100° 0.7384 [38] @ 50° 0.7511 [6] @ 30° 0.7598 [30] 0.7600 [38] 0.7605 [27] 0.7620 [6] @ 15° 0.7621 [26] @ 15° 0.7732 [6] @ 0° 0.7729 [6] @ 0° 0.7744 [38] @ 0° 0.7954 [6] @ −31°	1.4326 [26] @ 21.5° 1.4338 [38] 1.43040 [27] 1.4319 [30] 1.4360 [38] @ 15°	$\frac{dn}{dt} = -0.00044$/°C. (15° to 25°)
Dodecene-6					
(Mixtures of *cis* and *trans* isomers) C–(C)$_4$–C=C–(C)$_4$–C		62.5 to 62.6 [37] @ 15mm	0.7423 [37]	1.4252 [37]	
2-Methylundecene-2					
C–C=C–(C)$_7$–C with C on the second C		210 to 211.5 [17] @ 752mm	0.7590 [17]	1.4270 [17]	

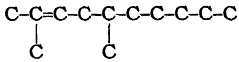
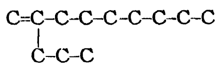
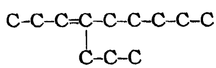
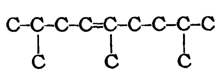
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*

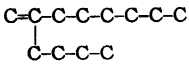
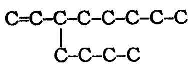
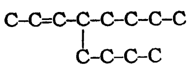
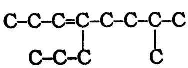
2-Methylundecene-(4 or 5)
(Mixtures of *cis* and *trans* isomers are possible in either case)
C–C–C–C=C–(C)$_5$–C
  |
  C
or
C–C–C–C–C=C–(C)$_4$–C
  |
  C
		204 to 206 [189]			

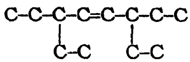
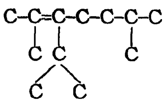
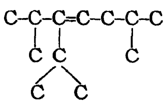
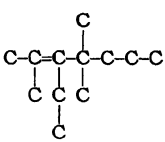
6-Methylundecene-5
(Mixtures of geometrical isomers)
C–(C)$_3$–C=C–(C)$_4$–C
  |
  C
		90 to 92 [23]
		@ 15mm
			0.7647 [23]
			@ 25°
				1.4368 [23]	

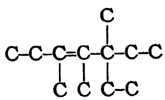
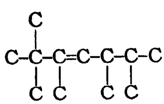
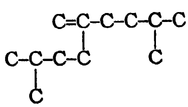
2-Ethyldecene-1
C=C–(C)$_7$–C
  |
  C–C
		91 to 93 [19]
		@ 11mm
			0.7703 [19]
			@ 21°		

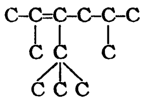
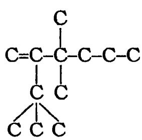
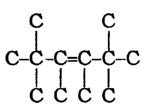
***d*-2,3-Dimethyl-decene-1**
C=C–C–C–C–C–C–C–C–C
  | |
  C C
		101 to 105 [24]
		@ 20mm
					$[\alpha]_D^{25} = +0.33°$ [24]

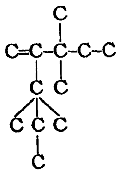
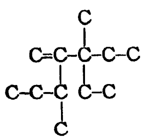
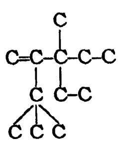
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
l-2,5-Dimethyldecene-2 		125 [23] @ 100mm			$[\alpha]_D^{25} = -0.35°$ [22] $[M]_D^{25} = -0.59°$ [22]
2-Propylnonene-1 		88 to 90 [20] @ 13.5mm	0.7630 [20] @ 22°	1.4311 [20] @ 22°	
4-Propylnonene-3 (Mixtures of geometrical isomers) 		84 to 87 [23] @ 15mm	0.7643 [23] @ 25°	1.4362 [23]	
2,5,8-Trimethyl-nonene-4 (Mixtures of geometrical isomers) 		74 to 76 [9] @ 9mm	0.7678 [9] @ 12.3° 0.7768 [9] @ 0°	1.43521 [9] @ 12.3°	

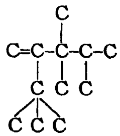
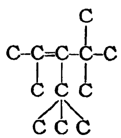
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2-Butyloctene-1 5-Methyleneundecane 		88 to 89 [20] @ 14mm	0.7642 [20] @ 23°	1.4315 [20] @ 20.5°	
3-Butyloctene-1 		84.8 [37] @ 15mm	0.7591 [37]	1.4295 [37]	
4-Butyloctene-2 		115.2 to 117.2 @ 55 to 57mm [39]	0.7558 [39] @ 25°	1.4287 [39] @ 25°	
7-Methyl-4-propyl-octene-3 		190 to 191 [12] 189 to 191 [13] @ 756.5mm 89 to 91 [13] @ 20mm	0.7610 [13] D_0^{20} 0.7672 [12] @ 21° 0.7773 [13] D_0^0 0.7851 [12] @ 0°		$\log_{10} Pmm = -\frac{2653.06248}{T} + 8.60733$ (calc.) [13] (20−756.5mm.) (T=°C.+273.1)

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
3,6-Diethyloctene-4 (Mixtures of *cis* and *trans* isomers) 		198 [33]	0.77556 [33]	1.43941 [33]	
2,6-Dimethyl-3-isopropylheptene-(2 or 3)  or 		188 to 190 [14] @ 772mm	0.7775 [14] D^{20}_{0}		
2,4,4-Trimethyl-3-ethylheptene-2 (?) 		193 to 197 [2]	0.786 [2] D^{19}_{19} 0.795 [2] D^{0}_{0}		

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_{4}	n^{20}_{D}	Additional Data
3,4,5-Trimethyl-5-ethylheptene-3 (?) (Mixtures of *cis* and *trans* isomers) 		195 to 197 [7] 196 to 199 [2]	0.798 [2] D^{19}_{19} 0.809 [2] D^{0}_{0}		
2,2,3,5,6-Pentamethyl-heptene-3 (?) (Mixtures of geometrical isomers) 		54.9 to 56.5 [35] @ 12mm 54.9 to 58.5 [35] @ 10.5mm			
5-Methyl-2-isoamyl-hexene-1 (?) 		189 to 194 [11]			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2,5-Dimethyl-3-isobutylhexene-2 		65 @ 10mm [10]			
3,3-Dimethyl-2-*tert*-butylhexene-1 		195 to 199 [31]	0.8040 [31] @ 16°	1.4510 [31] @ 18°	
2,2,3,4,5,5-Hexamethyl-hexene-3 (?) (Mixtures of *cis* and *trans* isomers) 		170 to 183 [28]			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
3,3-Dimethyl-2-*tert*-pentylpentene-1 		200 to 204 [31]	0.8176 [31]	1.4610 [31] @ 18°	
3-Methyl-3-ethyl-2-*sec*-butylpentene-1 		196 to 199 [32]	0.8064 [32] @ 12°	1.4500 [32] @ 14°	
3-Methyl-3-ethyl-2-*tert*-butylpentene-1 		198 to 203 [31]	0.8189 [31] @ 16°	1.4570 [31] @ 15°	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
3,3,4-Trimethyl-2-*tert*-butylpentene-1 		195 to 200 [31]	0.819 [31] @ 8°	1.4560 [31] @ 14°	
2,4,4-Trimethyl-3-*tert*-butylpentene-2 (?) 	< −30° [4,5]	178 to 181 [8] @ 768mm 173 to 176 [1] 177 [3] 177 to 179 [36] 177.5 to 178.5 [3] 177.5 to 179 [4,5] 178.5 to 179.5 [18] 179 to 181 [18] 178 to 180 [16] @ 752mm 110 to 111 [21] @ 100mm 71 to 72 [25] @ 20mm 56 @ 10mm [18]	0.746 [4,5] @ 50° 0.7590 [18] 0.7600 [18] 0.7613 [21] @ 17° 0.773 [3] 0.774 [3,4,5] 0.7747 [18] D_0^0	1.4311 [36] @ 30° 1.4306 [18] 1.43060 [18] 1.4356 [36] 1.43281 [21] @ 17° 1.4445 [36] @ 0° 1.4580 [36] @ −30°	$\log_{10} P_{mm} = -\frac{2261.7533}{T} + 7.87254$ (10 to 760mm) [18] (T=°C.+273.1)

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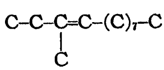
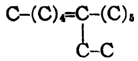
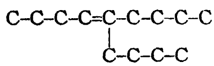
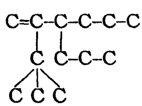
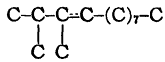
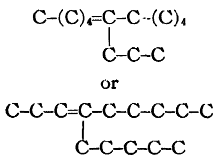
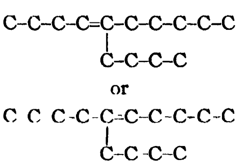
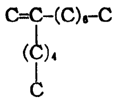
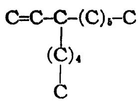
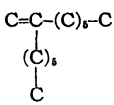
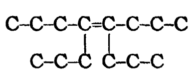
Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Tridecene-1 C=C–(C)$_{10}$–C	−13 [9]	102 to 103 [9] @ 10mm	0.7670 [9] @ 25° 0.7856 [9] @ 0°	1.4328 [9] @ 25°	$\frac{dD}{dt} = -0.000744$/°C. (0° to 25°)
Tridecene-6 C–(C)$_4$–C=C–(C)$_6$–C		80 to 81 [8] @ 6mm	0.76447 [8] @ 25°	1.4320 [8] @ 25°	
n*-Tridecene-*x		228 to 231 [1]	0.7977 [1]	1.4488 [1]	
3-Methyldodecene-3 (Mixtures of geometrical isomers) 		105 to 107 [2] @ 12mm	0.7802 [2]		

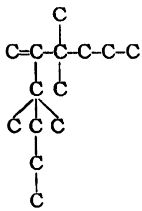
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
6-Ethylundecene-5 (Mixtures of geometrical isomers) 		102 to 105 [4] @ 15mm	0.7701 [4] @ 25°	1.4401 [4]	
5-Butylnonene-4 		**216** 215.5 to 216.5 [3] 212.5 to 213 [5] @ 735mm 108 to 109 [6] @ 22mm 98 to 99 [6] @ 15mm 90 @ 10mm [3] 60 @ 1.2mm [5]	**0.7730** 0.7724 [5] 0.7745 [3]	**1.4415** 1.4375 [3] 1.4392 [5] 1.4419 [6] 1.4421 [6]	$\log_{10} P_{mm} = -\frac{2650.92992}{T} + 8.300826$ [3] (10 to 760mm) ($T = 273.1 + t$°C.)
3-Propyl-2-*tert*-butylhexene-1 		205 to 207 [7]	0.791 [7] @ 16°	1.4470 [7] @ 18°	

(1) A. Pictet and J. Potok, Helv. Chim. Acta **2**, 501, 1919.
(2) H. Thoms and B. Ambrus, Arch. Pharm. **263**, 263, 1925.
(3) D. Ivanoff, Bull. soc. chim. [4] **37**, 287, 1925.
(4) F. C. Whitmore and F. E. Williams, J. Am. Chem. Soc. **55**, 406, 1933.
(5) F. C. Whitmore and H. M. Woodburn, J. Am. Chem. Soc. **55**, 361, 1933.
(6) J. M. Church, F. C. Whitmore, and P. V. McGrew, J. Am. Chem. Soc. **56**, 176, 1934.
(7) I. N. Nasarov, Ber. **70B**, 617, 1937.
(8) D. Aelony, Thesis—Leland Stanford Univ., 1938.
(9) A. P. Kozacik and E. Emmet Reid, J. Am. Chem. Soc. **60**, 2436, 1938.

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Tetradecene-1			**0.772_8**	**1.4365**	$\frac{dD}{dt} = -0.000655$/°C. (−15° to 30°)
C=C–(C)$_{11}$–C	−12 [1]	124.5 to 125 [5] @ 15mm	0.7638 [1] @ 30°	1.4381 [5] @ 21.1°	
		127 @ 15mm [1]	0.7737 [6]	1.43647 [6]	
		114 to 115 [6] @ 3mm	0.788 [2] D_{20}^{20}		
			0.7745 [1] @ 15°		
			0.7852 [1] @ 0°		
			0.7936 [1] @ −12°		
Tetradecene-7					
(Mixtures of *cis* and *trans* isomers)		126.1 to 126.5 @ 15mm [9]	0.7728 [9]	1.4385 [9]	
C–(C)$_5$–C=C–(C)$_5$–C					
4-Methyltridecene-4					
(Mixtures of geometrical isomers)		115 to 117 [2] @ 10mm	0.788 [2]		
C–C–C–C(–C)=C–(C)$_7$–C					

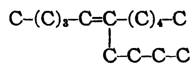
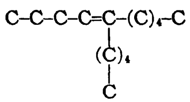
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_{4}	n^{20}_{D}	Additional Data
2,3-Dimethyl-dodecene-3 (Mixtures of geometrical isomers) 		116 to 122 [2] @ 13mm			
6-Propylundecene-5 or 4-Pentylnonene-3 (Mixtures of geometrical isomers are possible if compound is 6-propyl-undecene-5) 		111 to 114 [3] @ 15mm	0.7749 [3] @ 25°	1.4411 [3]	
5-Butyldecene-(4 or 5) (Mixtures of geometrical isomers are possible if compound is 5-butyl-decene-4) 		113 to 115 [3] @ 15mm	0.7748 [3] @ 25°	1.4414 [3]	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
2-Pentylnonene-1 		117 to 118 [4] @ 11mm	0.7728 [4] @ 22.5°	1.4374 [4] @ 22.5°	
3-Pentylnonene-1 		116.9 [9] @ 15mm	0.7705 [9]	1.4350 [9]	
2-Hexyloctene-1 		100 to 105 [8] @ 7mm			
4,5-Dipropyloctene-4 		92 to 95 [8] @ 11mm			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_{4}	n^{20}_{D}	Additional Data
3,3-Dimethyl-2-[1,1-dimethylbutyl]-hexene-1 		229 to 233 [7]	0.8228 [7] @ 10°	1.4574 [7] @ 18°	

(1) F. Krafft, Ber. **16**, 3018, **1883.**
(2) H. Thoms and B. Ambrus, Arch. Pharm. **263**, 263, **1925.**
(3) F. C. Whitmore and F. E. Williams, J. Am. Chem. Soc. **55**, 406, **1933.**
(4) J. v. Braun and G. Marz, Ber. **67B**, 1696, **1934.**
(5) A. Krassilchik, Ann. combustibles liquides **10**, 923, **1935.**
(6) A. Maman, Pub. sci. tech. ministère air (France) No. **66**, 1, **1935.**
(7) I. N. Nasarov, Ber. **70B**, 606, **1937.**
(8) D. Aelony, Thesis—Leland Stanford Univ., 1938.
(9) D. J. Gibson, Thesis—Ohio State Univ., Sept., 1938.

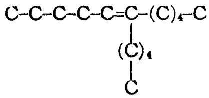
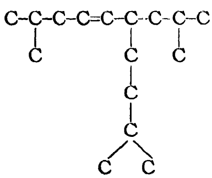
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Pentadecene-1 C=C-(C)$_{12}$-C	**-3** -2.8 [5] -0.50 [2]	144 to 145 [2] @ 15mm 127.5 to 128.5 @ 10mm [5]	**0.778_9** 0.7751 [5] @ 25° 0.7809 [2] @ 20° 0.78215 [2] @ 12.3° 0.7941 [2] @ 0° 0.7921 [5] @ 0°	1.4353 [5] @ 25° 1.44434 [2] @ 12.35°	$\frac{dD}{dt} = -0.000686/°C.$ (0° to 25°)
Pentadecene-6 (?) (Mixtures of *cis* and *trans* isomers) C-(C)$_4$-C=C-(C)$_7$-C		120 to 125 [4] @ 3mm	0.8200 [4] @ 15°	1.4656 [4] @ 15°	
3,7,11-Trimethyl-dodecene-(1 or 2) (Mixtures of *cis* and *trans* isomers are possible if compound is 3,7,11-trimethyldodecene-2) C=C-C-(C)$_3$-C-(C)$_3$-C-C with C on each of the 3rd, 7th and 11th carbons or C-C=C-(C)$_3$-C-(C)$_3$-C-C with C on each of the 3rd, 7th and 11th carbons		290 [1] 287 to 288 [1] @ 724mm 150 to 152 [1] @ 11mm	0.790 [1] 0.803 [1] @ 0°		

Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
6-Butylundecene-5 or 5-Pentyldecene-4 (Mixtures of *cis* and *trans* isomers are possible if compound is 6-Butylundecene-5)  or 		126 to 129 [3] @ 15mm	0.7781 [3] @ 25°	1.4436 [3]	

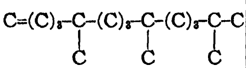
(1) R. Willstatter, E. W. Mayer, and E. Huni, Ann. **378,** 73, **1911.**
(2) S. Landa and M. Landova, Collection Czechoslov. Chem. Commun. **2,** 31, **1930.**
(3) F. C. Whitmore and F. E. Williams, J. Am. Chem. Soc. **55,** 406, **1933.**
(4) H. Marcelet, Compt. rend. **202,** 1809, **1936.**
(5) A. P. Kozacik and E. Emmet Reid, J. Am. Chem. Soc. **60,** 2436, **1938.**

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Hexadecene-1, Cetene	**4.0**		**0.7835**	**1.4417**	$\frac{dD}{dt} = -0.0007200/°C.$ (15° to 140°)
C=C-(C)$_{13}$-C	2.2 [17] 3.4 to 4.1 [16] 3.5 [13] 4.0 [5] 4 [9,15,25] 4.0 to 4.1 [5] 4.0 to 4.1 [23] 4 to 5 [27]	275 [1] 274 [4] 181.4 to 183.6 @ 44mm [27] 163 [15] @ 21mm 130 to 150 [11] @ 18mm 157.5 [17] @ 15.5mm 155 @ 15mm [1] 154.5 to 155 [23] @ 15mm 154 to 155 [1] @ 15mm 152 to 154 [14] @ 13mm 149.5 to 150 [21] @ 12.5mm 149 to 154 [21] @ 12mm 158 [26] @ 11.5mm 125 to 145 [12] @ 10mm 123 @ 3mm [15]	0.6996 [7] @ 140.5° 0.7394 [10] @ 79.8° 0.7686 [5] @ 37.1° 0.7689 [5] @ 37.1° 0.779 [15] @ 25° 0.7483 [7] @ 20.2° 0.7830 [22] 0.7825 [17] 0.8850 [11] D_{20}^{20} 0.78932 [3] @ 15.2° 0.7838 [23] @ 15° 0.7839 [5] @ 15° 0.7868 [13] @ 15° 0.7890 [21] @ 15° 0.7849 [10] @ 14.6° 0.7915 [5] @ 4° 0.7917 [5] @ 4°	1.4396 [26] @ 25° 1.4422 [21] @ 20.2° 1.4411 [23] 1.44110 [22] 1.4418 [26] 1.4419 [17] 1.4420 [9] @ 19°	$\frac{dn}{dt} = -0.00053/°C.$ (20° to 25°)

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
9-Methylpentadecene-(6 or 7) (Mixtures of *cis* and *trans* isomers are possible in either case) C–(C)$_4$–C=C–C–C–(C)$_5$–C with C branch on the fourth C of the chain or C–(C)$_5$–C=C–C–(C)$_5$–C with C branch on the third C of the chain		106 to 111 [19] @ 4mm 142 to 146 [18] @ 12mm 148 [18] @ 12mm 210 to 220 [6] @ 150mm 250 [2] 310 to 320 [6]	0.7993 [18] @ 21° 0.7926 [18] @ 19° 0.8251 [6] D_{17}^{17} 0.814 [2] @ 15° 0.8360 [6] D_0^0	1.4419 [19] 1.4528 [18] 1.4535 [18] @ 19°	
5-Butyldodecene-(4 or 5) (Mixtures of geometrical isomers are possible if compound is 5-butyl-dodecene-4) C–C–C–C=C–(C)$_6$–C with C–C–C–C branch on the fifth C or C–C–C–C–C=C–(C)$_5$–C with C–C–C–C branch on the fifth C		107 to 110 [24] @ 5mm 216 to 263 [24] 265 to 267 [24]	0.7855 [24] 0.7864 [24]	1.4450 [24] 1.4452 [24]	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
6-Pentylundecene-5 		135 to 137 [20] @ 17mm 132 to 124 [20] @ 15mm			
2,8-Dimethyl-5-isoamylnonene-4 		114 to 115 [8] @ 10mm			

(1) J. Dumas and E. Péligot, Ann. chim. phys. [2] **62**, 5, **1836**; Ann. **19**, 290, **1836**.
(2) J. Bouis, Ann. chim. phys. [3] **44**, 77, **1855**; Ann. **92**, 396, **1854**.
(3) D. Mendelejeff, Jahresber. Fortschr. Chem. **1860**, 7; Compt. rend. **51**, 97, **1860**, Rép. chim. pure **3**, 33, **1861**; Zeitschr. Chem. Pharm. **1860**, 481.
(4) Tuttschew, Jahresber. Fortschr. Chem. **1860**, 405; Rép. chim. pure **2**, 463, **1860**; Zeitschr. Chem. Pharm. **1861**, 59.
(5) F. Krafft, Ber. **16**, 3018, **1883**.
(6) A. Rossolimo, J. Russ. Phys. Chem. Soc. **26**, 250, **1894**; Ber. **27**, Ref., 626, **1894**.
(7) J. F. Eykmann, Rec. trav. chim. **14**, 183, **1895**.
(8) V. Grignard, Compt. rend. **136**, 815, **1903**.
(9) A. Klages, Ber. **36**, 3584, **1903**.
(10) J. F. Eijkman, Chem. Weekblad **3**, 701, **1906**.
(11) B. T. Brooks and I. Humphrey, J. Am. Chem. Soc. **40**, 822, **1918**.
(12) W. F. Faragher, W. A. Gruse, and F. H. Garner, Ind. Eng. Chem. **13**, 1044, **1921**.
(13) W. F. Seyer and J. L. Huggert, Trans. Proc. Roy. Soc. Canada [3] **18**, 213, **1924**.
(14) S. Landa, Bull. soc. chim. [4] **43**, 1086, **1928**.
(15) W. E. Messer, Chem. News **138**, 292, **1929**.
(16) S. Skraup and O. Binder, Ber. **62**, 1127, **1929**.
(17) H. I. Waterman, P. van't Spijker, and H. A. van Westen, Rec. trav. chim. **48**, 1103, **1929**.
(18) M. Lerer, Ann. combustibles liquides **8**, 681, **1933**.
(19) F. C. Whitmore and P. A. Krueger, J. Am. Chem. Soc. **55**, 1528, **1933**.
(20) J. M. Church, F. C. Whitmore, and P. V. McGrew, J. Am. Chem. Soc. **56**, 176, **1934**.
(21) A. Krassilchik, Ann. combustibles liquides **10**, 923, **1935**.
(22) A. Maman, Pub. sci. tech. ministère air (France) No. **66**, 1, **1935**.
(23) S. L. Langedijk and P. L. Stedehouder, Rec. trav. chim. **56**, 526, **1937**.
(24) A. D. Petrov and D. N. Andreev, J. Gen. Chem. (U.S.S.R.) **7**, 570, **1937**.
(25) A. R. Ubbelohde, Trans. Faraday Soc. **34**, 282, **1938**.
(26) E. B. Evans, J. Inst. Petr. Tech., **24**, 321, **1938**.
(27) R. L. Wakeman, Thesis, Massachusetts Institute of Technology, 1930

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
Heptadecene-1 C=C–$(C)_{14}$–C	11.2 [5]	155.4 to 156.4 [5] @ 10mm	0.7859 [5] @ 25° 0.7892 [5] @ 20°	1.4417[5] @ 25°	
Heptadecene-8 (Mixtures of *cis* and *trans* isomers) C–$(C)_{6}$–C=C–$(C)_{7}$–C	Ca. –50 [3]	173 [3] @ 16mm 159.5 to 160 [4] @ 9.5mm 136 [3] @ 3.5mm	0.795 [3] @ 25° 0.7977 [1] @ 10° 0.8006 [1] @ 6° 0.8042 [1] @ 0°		
5,9,13-Trimethyltetradecene-1 (?) 		288 to 291 [2] @ 719mm 153 to 155.5 [2] @ 10mm	0.790 [2]		$\log_{10} P_{mm} = -\frac{3300.6151}{T} + 8.723447$ (calc.) (10 to 719mm) ($T = 273.1 + t$°C.)

(1) J. Mai, Ber. **22**, 2133, 1889.
(2) R. Willstätter, O. Schuppli, and E. W. Mayer, Ann. **418**, 121, 1919.
(3) W. E. Messer, Chem. News **138**, 292, 1929.
(4) A. Krassilchik, Ann. combustibles liquides **10**, 923, 1935.
(5) A. P. Kozacik and E. Emmet Reid, J. Am. Chem. Soc. **60**, 2436, 1938.

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Octadecene-1	**18**				$\frac{dD}{dt} = -0.000328$/°C. (15° to 45°)
C=C–(C)$_{15}$–C	18 [1,4,5,7]	179 to 180 [5] @ 18mm 179 [1,6,7] @ 15mm 174 [4] @ 10mm	0.7823 [4] @ 42° 0.7790 [1] @ 35.6° 0.7863 [4] @ 32° 0.7881 [1] @ 22.1° 0.7884 [4] @ 22° 0.7910 [1] @ 18°	1.4411 [4] @ 32° 1.4443 [4] @ 22°	
Octadecene-9					
(High-melting geometrical isomer) C–(C)$_7$–C=C–(C)$_7$–C	2 [2]		0.7917 [2] @ 19°	1.4478 [2] @ 19°	
Octadecene-9					
(Low-melting geometrical isomer) C–(C)$_7$–C=C–(C)$_7$–C	< −15 [2]	190 [2] @ 15mm	0.7968 [2]	1.4483 [2]	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data

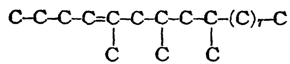
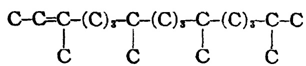
2-Methylheptadecene-2
C–C=C–(C)$_{13}$–C
    |
    C
	−2.5 [3]	277 [3]
		@ 100mm
		314 [3]
			0.7449 [3]
			@ 100°
			0.7953 [3]
			0.8022 [3]
			@ 10°
			0.8089 [3]
			@ 0°
					$\log_{10} P_{mm} = -\frac{7688.3692}{T} + 13.10125$ [3]
					(100 to 760mm)
					($T = 273.1 + t$°C.)
					$\frac{dD}{dt} = -0.0006892 (1 - 0.001414t)$/°C.
					(0° to 100°)

(1) H. Gault and Y. Altchidjean, Ann. chim. [10] **2**, 209, **1924.**
(2) J. Boeseken and A. H. Belinfante, Rec. trav. chim. **45**, 914, **1926.**
(3) S. Landa and R. Riedl, Collection Czechoslov. Chem. Commun. **2**, 520, **1930.**
(4) M. V. Dover and W. A. Hensley, Ind. Eng. Chem. **27**, 337, **1935.**
(5) K. H. Meyer and P. Streuli, Helv. Chim. Acta **20**, 1179, **1937.**
(6) J. C. Corruthers, Trans. Faraday Soc. **34**, 300, **1938.**
(7) F. Krafft, Ber. **16**, 3032, **1883.**

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Nonadecene-1 (?)					
Arachidene		180 to 185 [1] @ 3mm	0.8550 [1] @ 15°	1.4761 [1] @ 15°	
C=C–(C)$_{16}$–C					
Nonadecene-1					
C=C–(C)$_{16}$–C	21.7 [2]	177 [2] @ 10mm	0.7858 [2] @ 35° 0.7889 [2] @ 30°		

(1) H. Marcelet, Compt. rend. **202,** 1809, **1936.**
(2) A. P. Kozacik and E. Emmet Reid, J. Am. Chem. Soc. **60,** 2436, **1938.**

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2-Methylnonadecene-1 C=C–(C)$_{16}$–C with C on the 2nd C	11 to 12 [3]	146 [3] @ 2.2mm 189 [3] @ 10mm	0.795 [3] @ 22°	1.4504 [3] @ 23.5°	
3-Ethyloctadecene-2 (Mixtures of geometrical isomers) C–C=C–(C)$_{14}$–C with C–C on the 3rd C		119 to 122 [4] @ 10mm	0.7517 [4] @ 99° 0.7575 [4] @ 90° 0.7640 [4] @ 80° 0.7710 [4] @ 70° 0.7777 [4] @ 60° 0.7844 [4] @ 50° 0.7906 [4] @ 40° 0.7973 [4] @ 30° 0.8040 [4]	1.45585 [4] @ 12.4°	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_4	n^{20}_D	Additional Data
3-Ethyloctadecene-2—(*Continued*)			0.8106 [4] @ 10° 0.8181 [4] @ 0°		
5,7,9-Trimethylheptadecene-4 (?) (Mixtures of geometrical isomers) 		168 [5] @ 10mm			
3,7,11,15-Tetramethylhexadecene-2 (?) (Mixtures of *cis* and *trans* isomers) 		177 to 178 [2] @ 10.5mm 167 to 168 [1] @ 7.5mm 106.5 to 108 [1] @ 0.04 to 0.05mm	0.817 [1] @ 0°		

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
5-Butylhexadecene-4 (Mixtures of geometrical isomers) C–C–C–C=C–$(C)_{10}$–C (at the 5th C:) C–C–C–C		165 to 167.5 [7] @ 15mm	0.7660 [7] @ 70° 0.8010 [7]	1.4509 [7]	
2-Octyldodecene-1 C=C–$(C)_{9}$–C (at the 2nd C:) $(C)_{7}$–C		193 to 195 [6] @ 12mm	0.8102 [6] @ 22.5°		

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(3) W. E. Messer, Chem. News **138,** 292, **1929**
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(6) J. v. Braun and G. Marz, Ber. **67B,** 1696, **1934.**
(7) A. D. Pétroff, K. I. Karasseff, and M. A. Tschelzowa, Bull. soc. chim. [5] **3,** 169, **1936.**

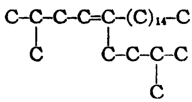
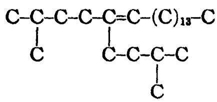
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
$C_{21}H_{42}$ Heneicosenes					
Heneicosene-9					
(Mixtures of *cis* and *trans* isomers) C–(C)$_7$–C=C–(C)$_{10}$–C	3 [4]	201 to 202 [4] @ 12mm 201 to 202 [3] @ 11mm	0.7981 [30] @ 25° 0.8015 [30] 0.8048 [30] @ 15°		
$C_{22}H_{44}$ Docosenes					
Docosene-1					
C=C–(C)$_{19}$–C	41 [7]	174 to 178 [7] @ 0.6mm			
4-Propylnonadecene-3					
(Mixtures of geometrical isomers) C–C–C=C–(C)$_{14}$–C with C–C–C attached to C-4		204 to 206 [11] @ 10mm	0.7525 [11] @ 99° 0.7588 [11] @ 90° 0.7652 [11] @ 80° 0.7710 [11] @ 70° 0.7793 [11] @ 60° 0.7858 [11] @ 50° 0.7920 [11] @ 40° 0.7982 [11] @ 30° 0.8044 [11] 0.8116 [11] @ 10° 0.8182 [11] @ 0°	1.45568 [11] @ 13.1°		

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
$C_{23}H_{46}$ Tricosenes					
Tricosene-11					
(High-melting geometrical isomer) C–(C)$_9$–C=C–(C)$_{10}$–C	17 to 18 [5] 19 [16]	225 [16] @ 15mm	0.7725 [16] @ 70° 0.8055 [16]	1.4537 [16]	
Tricosene-11					
(Low-melting geometrical isomer) C–(C)$_9$–C=C–(C)$_{10}$–C	1 to 2 [5]				
$C_{24}H_{48}$ Tetracosenes					
2-Methyltricosene-2					$\frac{dD}{dt} = -0.0006710$/°C. (40° to 100°)
C–C(–C)=C–(C)$_{19}$–C	41.5 [9]	234 to 237 [9] @ 10mm	0.7656 [9] @ 100° 0.7994 [9] @ 50° 0.8047 [9] @ 41.5°		

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
5-Butyleicosene-4					
(Mixtures of geometrical isomers)		219 to 221 [11] @ 10mm	0.7568 [11] @ 99°		

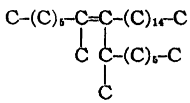
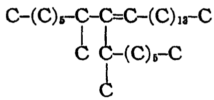
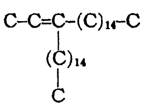
C–C–C–C=C–$(C)_{14}$–C
         |
         C–C–C–C
			0.7631 [11] @ 90°		

			0.7694 [11] @ 80°		
			0.7755 [11] @ 70°		
			0.7821 [11] @ 60°		
			0.7889 [11] @ 50°		
			0.7951 [11] @ 40°		
			0.8018 [11] @ 30°		
			0.8077 [11]		
			0.8139 [11] @ 10°		
			0.8205 [11] @ 0°		
$C_{26}H_{52}$ Hexacosenes					
Hexacosene-1					
C=C–$(C)_{23}$–C	51 to 52 [17]	200 to 205 [17] @ 2mm			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2-Methyl-5-isoamyleicosene-(4 or 5)					
(Mixtures of *cis* and *trans* isomers are possible if compound is 2-Methyl-5-isoamyleicosene-4)		235 to 240 [10,13] @ 15mm			
 or 					
$C_{27}H_{54}$ Heptacosenes					
Heptacosene-1 (?) Cerotene					
C=C–(C)$_{24}$–C (?)	57 to 58 [1,2]				
Heptacosene-13					
(High-melting geometrical isomer)	34.2 [5]				
C–(C)$_{11}$–C=C–(C)$_{12}$–C					

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Heptacosene-13					
(Low-melting geometrical isomer)	4 to 5 [5]	210 [5] @ 1mm			
C–(C)$_{11}$–C=C–(C)$_{12}$–C					
$C_{28}H_{56}$ Octacosenes					
Octacosene-1					
C=C–(C)$_{25}$–C	56 to 57 [17]	220 to 223 [17] @ 1.5mm			
10-Nonylnonadecene-9					
C–(C)$_7$–C=C–(C)$_8$–C (with (C)$_8$–C on the second C of the double bond)		227.5 to 228.5 @ 2.5mm [16]			
$C_{31}H_{62}$ Hentriacontenes					
Hentriacontene-1					
C=C–(C)$_{28}$–C	64 [8]	233 [8] @ 1.5mm 295 [8] @ 15mm			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Hentriacontene-15 (High-melting geometrical isomer) C–(C)$_{13}$–C=C–(C)$_{14}$–C	45.2 to 45.4 [5]	245 to 246 [5] @ 1mm			
Hentriacontene-15 (Low-melting geometrical isomer) C–(C)$_{13}$–C=C–(C)$_{14}$–C		241 to 242 [5] @ 2mm			
$C_{32}H_{64}$ Dotriacontenes					
7-Methyl-8-[2-methyl-heptyl]-tricosene-7 and 8 (Mixtures of geometrical isomers) C–(C)$_5$–C=C–(C)$_{14}$–C C C–(C)$_5$–C C		170 to 175 [12] @ 0.1mm	0.8450 [12] @ 23.5°		

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
7-Methyl-8-[2-methylheptyl]-tricosene-(7 or 8)					
(Mixtures of geometrical isomers are possible if compound is 7-Methyl-8-[2-octyl]-tricosene-7)		175 to 178 [10] @ 0.1mm	0.8450 [10] @ 23°		
 or 					
$C_{33}H_{66}$ Tritriacontenes					
3-Pentadecyloctadecene-2					
	10 [14]				
$C_{35}H_{70}$ Pentatriacontenes					
Pentatriacontene-17					
(High-melting geometrical isomer)	66.5 [5]				
C–(C)$_{15}$–C=C–(C)$_{16}$–C					

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Pentatriacontene-17					
(Low-melting geometrical isomer)	45 to 46 [5]	267 [5] @ 1mm			
C–(C)$_{15}$–C=C–(C)$_{16}$–C					
$C_{37}H_{74}$ Heptatriacontenes					
3-Heptadecyleicosene-2					

C–C=C–(C)$_{16}$–C
     |
   (C)$_{16}$
     |
     C
	21.5 [11]				

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(10) G. Hugel, Chimie and industrie **26,** 1282, **1931.**
(11) S. Landa, J. Cech, and V. Sliva, Collection Czechoslov. Chem. Commun. **5,** 204, **1933.**
(12) M. Lerer, Ann. combustibles liquides **8,** 681, **1933.**
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(14) H. Staudinger and F. Staiger, Ber. **68,** 707, **1935.**
(15) J. Strating and H. J. Backer, Rec. trav. chim. **55,** 903, **1936.**
(16) A. D. Pétroff, K. I. Karasseff, and M. A. Tschelzowa, Bull. soc. chim. [5] **3,** 169, **1936.**
(17) D. Aelony, Thesis—Leland Stanford Univ., 1938.

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Propadiene	**−136.1**	**−34.34**			$\frac{dD}{dt} = -0.0001214$/°C. (−80° to −34.34°)
Allene C=C=C	−146 [1] −136.1 [173]	−32 [1] −34.34 [171] −35.0 [174] −73.4 [174] @ 100mm	0.6629 [172] @ −34.34° 0.6699 [172] @ −40° 0.7184 [172] @ −80°	1.4169 [171] @ −34.34° 1.4212 [171] @ −40° 1.4444 [171] @ −70°	$\frac{dn}{dt} = -0.0007719$/°C. (−70° to −34.34°)
C_4H_6 Butadiene-1,2					
C=C=C-C		10.3 [4] 18 to 19 [2]	0.676 [4] @ 0°	1.4205 [4] @ 1.3°	
Butadiene-1,3					
C=C-C=C	−108.7 [173]	−4.75 [3] −5 to −4 [5] −2.6 [147] −4.51 [173] @ 757mm	0.650 [3] @ −6°	1.422 [3] @ −6° 1.4293 [147] @ −25°	
C_5H_8 Pentadiene-1,2		**44.7**	**0.6904**	**1.4191**	
Ethylallene C=C=C-C-C		44.7 [190] 44 to 45 [6]	0.6909 [190] 0.6890 [6]	1.4208 [190] 1.4149 [6]	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Pentadiene-1,3					
Piperylene		42.4 to 42.6 [168] @ 766mm	0.6794 [12] @ 25°	1.4206 [12] @ 25°	
(Mixtures of geometrical isomers)		42.2 [190]	0.685 [15]	1.4307 [190]	
		41.5 [134]	0.6803 [168]	1.4309 [168]	
C=C–C=C–C		41.8 to 42.2 @ 748mm [133]	0.6852 [134]	1.4309 [15]	
			0.6830 [7]	1.4280 [7]	
		42 [7,10]	0.6812 [17] @ 19°	1.44020 [8] @ 16.5°	
		42 to 44 [8]			
		43 [15]	0.6957 [8] @ 16.5°	1.4258 [9] @ 16°	
		42.0 to 42.3 [191]	0.6907 [16] @ 16°	1.43398 [133] @ 15°	
			0.6827 [133] @ 15°	1.4366 [133] @ 0°	
			0.7037 [12] @ 0°		
			0.6951 [11] @ 0°		
Pentadiene-1,4					
C=C–C–C=C	−148.1 [173]	26.27 [173] @ 767mm	0.6453 [13]		
		29 to 30 [13]			
		25.8 to 26.2 [14] @ 756mm			
		28.5 to 29.2 @ 742mm [152]			

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Pentadiene-2,3					$\frac{dD}{dt} = -0.000965$/°C. (0° to 20°)
C–C=C=C–C		49 to 51 [16]	0.7023 [16]		
			0.7216 [16] @ 0°		
3-Methylbutadiene-1,2		**40.5**	**0.6833**		$\frac{dD}{dt} = -0.00151$/°C. (0° to 20°)
C=C=C(C)–C		40.5 to 41.5 [20]	0.6940 [20]	1.41658 [25]	
		40 to 40.5 [25]	0.6833 [25]	1.41722 [26] @ 3.3°	
		39 to 40.5 [26]	0.678 [26]		
			0.6913 [26] @ 3.6°		
			0.7135 [20] @ 0°		
			0.7029 [25] @ 0°		

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
3-Methylbutadiene-1,3 or 2-Methylbutadiene-1,3	**−146.8**	**34.076**	**0.6808**	**1.42158**	$\frac{dD}{dt} = -0.0009166/°C.$ (0° to 20°)

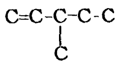
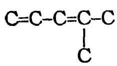
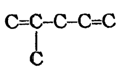
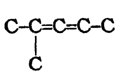
Isoprene
C=C-C=C
       |
       C
	−120 [21]
	−146.8 [143]
		33.75 to 34 [23] @ 762mm
		32 to 33 [18]
		33.5 [19]
		33.5 to 34 [22]
		34 [15]
		34.076 [143]
		34 to 34.5 [24] @ 758mm
		33.9 to 35.3 [168] @ 750mm
			0.6805 [143]
			0.6806 [168]
			0.6812 [21]
			0.6811 [24]
			0.682 [15]
			0.6794 [19] @ 19°
			0.6785 [22] @ 18.5°
			0.6867 [23] @ 16.5°
			0.6849 [21] @ 16°
			0.6842 [24] @ 15°
			0.6988 [19] @ 0°
				1.4224 [15]
				1.42160 [143]
				1.41540 [24]
				1.4207 [168]
				1.42617 [23] @ 16.5°
				1.42245 [21] @ 13°	

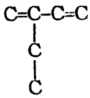
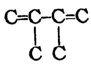
Isoprene (from India rubber)			0.6663 [175] D_{25}^{25} 0.6705 [175] D_{20}^{20} 0.6748 [175] D_{15}^{15} 0.6796 [175] D_{10}^{10} 0.6856 [175] D_4^4		
Isoprene (from turpentine)			0.6696 [175] D_{25}^{25} 0.6730 [175] D_{20}^{20} 0.6768 [175] D_{15}^{15} 0.6813 [175] D_{10}^{10} 0.6874 [175] D_4^4		

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Hexadiene-1,2					
C=C=C–C–C–C		78 to 79 [27]	0.7198 [27] @ 17°	1.4298 [27] @ 17°	
Hexadiene-1,3					
(Mixtures of geometrical isomers) C=C–C=C–C–C		72 to 74 [28]	0.714 [28] @ 12°		
Hexadiene-1,4					
(Mixtures of geometrical isomers) C=C–C–C=C–C		64 to 66 [29] 64.3 to 64.6 [102] @ 745mm			

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C.* @ 760mm	D_4^{20}	n_D^{20}	*Additional Data*
Hexadiene-1,5, Diallyl C=C–C–C–C=C	**140.8** −140.8 [173] −140.9 [34]	**59.57** 59.3 [32] @ 769.3mm 59.87 [173] @ 767mm 59.57 [13,34] 59.5 [31] 59 to 61 [135] 57 to 59 [145] 57 to 58.5 [35] 57.8 [30] @ 744mm	**0.6899** 0.6503 [32] @ 59.3° 0.6863 [34] @ 25° 0.6848 [176] @ 25° 0.7074 [31] @ 20.5° 0.6940 [35] 0.6880 [33] 0.6898 [176] 0.6872 [30] @ 15.9° 0.6946 [176] @ 15° 0.6983 [32] @ 11.9° 0.6993 [176] @ 10° 0.7052 [176] @ 4° 0.7106 [34] @ 0°	**1.4034** 1.4009 [35] 1.40102 [33] 1.4044 [34] 1.4012 [34] @ 25° 1.4076 [34] @ 15°	$\frac{dD}{dt} = -0.000998/°C.$ (0° to 60°) $\frac{dn}{dt} = -0.00064/°C.$ (15° to 25°)
Hexadiene-2,3 C–C=C=C–C–C		67.75 to 68.25 [154]	0.6804 [154] 0.6986 [154] @ 0°	1.40125 [154] n_β 1.40645 [154] n_γ	$\frac{dD}{dt} = -0.00091/°C.$ (0° to 20°)

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_{4}	n^{20}_{D}	Additional Data
Hexadiene-2,4 (Mixtures of geometrical isomers) C-C=C-C=C-C		87 to 89 [38,41] 80 to 82 [12,159] 80 [15] 82 [7] 77 to 78 [40] @ 752mm	0.7179 [7] @ 22° 0.7177 [12] @ 21° 0.7167 [159] 0.720 [15] 0.7727 [38] 0.72732 [40] @ 12.5° 0.72656 [12] @ 0°	1.4490 [7] @ 22° 1.4463 [12] @ 21° 1.4514 [15] 1.4450 [38] 1.4502 [159] 1.45591 [40] @ 12.5°	
3-Methylpentadiene-1,2 C=C=C-C-C with C on the 3rd C		70 to 71 [36]	0.7309 [36] @ 0°		
4-Methylpentadiene-1,2 C=C=C-C-C with C on the 4th C		70 [37]	0.7061 [37] @ 22°	1.4232 [37] @ 22°	
2-Methylpentadiene-1,3 (Mixtures of geometrical isomers) C=C-C=C-C with C on the 2nd C		75 to 77 [43] @ 779mm 75.6 to 75.7 [168] @ 762mm 75.6 to 76.0 [151] 76 to 77 [159]	0.71896 [151] 0.7196 [168] 0.7215 [159] 0.71761 [43] @ 16°	1.4418 [159] 1.44655 [151] 1.4467 [168]	

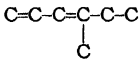
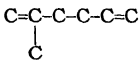
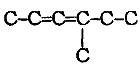
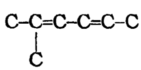
Name and Carbon Skeleton	M. P., °C	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
3-Methylpentadiene-1,3					
(Mixtures of geometrical isomers) 		76 to 79 [51,55] [159] 77 to 78 [50]	0.7452 [159] 0.741 [55] 0.7473 [51] @ 16.5° 0.7576 [51] @ 0°	1.4528 [159] 1.4346 [55] 1.4561 [50] @ 21° 1.45427 [51] @ 16.5°	
4-Methylpentadiene-1,3		**76**	**0.7189**	**1.4503**	
	-70 [53]	74 to 75 [44] 75.5 to 76 [47] 76 to 77 [159] 76.0 to 76.5 @ 759mm [151]	0.71415 [46] 0.7183 [168] 0.71814 [151] 0.7204 [159]	1.44664 [47] 1.4472 [159] 1.4491 [54] 1.4525 [168] 1.45317 [151]	
2-Methylpentadiene-1,4					
Isodiallyl 		80 to 83 [136]	0.727 [136] @ 15° 0.7413 [137] @ 11°		
2-Methylpentadiene-2,3		**72**			$\frac{dD}{dt} = -0.000963/°C.$ (0° to 16°)
Trimethylallene 		71.5 to 72.5 [52] 71 to 73 [48] 77 to 78 [49]	0.71482 [48] @ 16.1° 0.73033 [48] @ 0°		

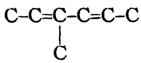
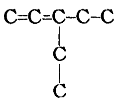
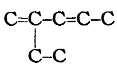
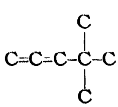
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2-Ethylbutadiene-1,3					
		72 to 74 [38] 72 to 77 [56]			
2,3-Dimethyl-butadiene-1,3	**−76.0**	**68.9**	**0.7263**	**1.4386**	$\frac{dD}{dt} = -0.0009108/°C.$ (0° to 20°)
	−65 [53] −76.0 [175]	69.5 to 70 [58] @ 772mm 70 [15] 71 [60] 69 to 70 [159] 69 [134] 68.90 [175] 67.3 to 67.8 [53] 68.8 to 68.9 [61] @ 753.5mm 69.5 [57] @ 750mm	0.7262 [58,134] 0.7263 [159] 0.7264 [61] 0.725 [15] 0.7304 [60] @ 16.5° 0.7304 [53] @ 16° 0.73074 [59] @ 15° 0.7565 [57] @ 0° 0.7445 [58] @ 0° 0.7444 [134] @ 0°	1.43929 [61] 1.4390 [175] 1.437717 [58] 1.4375 [159] 1.4382 [15] 1.44321 [60] @ 16.5° 1.4421 [59] @ 15° 1.43866 [53] @ 13°	
C_7H_{12}					
Heptadiene-1,2		**105**	**0.7294**	**1.4322 @ 18°**	$\frac{dD}{dt} = -0.000707/°C.$ (0° to 20°)
C=C=C-C-C-C-C		103 to 106 [17] 105 to 106 [27]	0.7306 [27] @ 18° 0.734 [17] @ 14° 0.7435 [17] @ 0°	1.4322 [27] @ 18° 1.4524 [17] @ 16°	

Name and Carbon Skeleton	*M. P., °C*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Heptadiene-1,4 (Mixtures of geometrical isomers) C=C–C–C=C–C–C		92.0 to 92.3 [152] @ 755mm			
Heptadiene-2,4 (Mixtures of geometrical isomers) C–C=C–C=C–C–C		104 to 106 [12] 107 [15] 107.5 to 108.0 [191]	0.7327 [12] @ 21.5° 0.731 [15] 0.75099 [12] @ 0°	1.4486 [12] @ 21.5° 1.4534 [15]	

5-Methylhexadiene-1,2
C=C=C–C–C–C
               |
               C
		96 [37]	0.7225 [37] @ 19°	1.4282 [37] @ 19°	

3-Methylhexadiene-1,3
C=C–C=C–C–C
       |
       C
		101 to 103 [63]	0.7407 [63] @ 25°	1.45247 [63] @ 25°	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
4-Methylhexadiene-1,3					
(Mixtures of geometrical isomers) 		97 to 98 [64]	0.7324 [64] @ 25°	1.4342 [64] @ 25°	
2-Methylhexadiene-1,5					
		92.5 [65] @ 769mm 92 [66]	0.7289 [65] @ 18.5°	1.42376 [65] @ 17.3°	
4-Methylhexadiene-2,3					
		107 to 109 [67]			
2-Methylhexadiene-2,4		**98**	**0.7460**	**1.4590**	$\frac{dD}{dt} = -0.00067/°C.$ (20° to 25°)
		97 to 99 [12,159] 104 [15]	0.7192 [12] @ 24° 0.7461 [159] 0.745 [15] 0.7389 [12] @ 0°	1.4266 [12] @ 24.5° 1.4585 [159] 1.4606 [15]	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
3-Methylhexadiene-2,4 (Mixtures of geometrical isomers) 		107 to 108 [51]	0.7625 [51] @ 15° 0.7753 [51] @ 0°	1.46146 [51] @ 15°	
3-Ethylpentadiene-1,2 		**97** 96 to 98 [36] 97 [52] @ 754mm	**0.7381** 0.7355 [52] @ 23.9° 0.7560 [52] @ 0° 0.7474 [36] @ 0°	1.43683 [52] @ 23.9°	$\frac{dD}{dt} = -0.000678/°C.$ (0° to 24°)
2-Ethylpentadiene-1,3 		97 to 99 [160] @ 735mm		1.4508 [160]	
4,4-Dimethyl-pentadiene-1,2 		**82** 81 to 82.5 [69] 80 to 83 [68]	0.7183 [68] 0.7365 [68] @ 0°		$\frac{dD}{dt} = -0.00091/°C.$ (0° to 20°)

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data

2,4-Dimethyl-pentadiene-1,3
C=C-C=C-C
  | |
  C   C
		93.2
		93.1 to 93.2 [70]
		92 to 94 [71] @ 759mm
		93 [52] @ 758mm
		92 to 93 [72] @ 750mm
			0.7371
			0.7343 [52] @ 23°
			0.7368 [70]
			0.7412 [71] @ 17.3°
			0.7359 [52] @ 16°
			0.7490 [73] @ 12°
			0.7595 [73] @ 0°
			0.7471 to 0.7515 [52] @ 0°
				1.4408
				1.43904 [52] @ 23°
				1.4412 [70]
				1.44055 [71] @ 17.3°
				1.43804 [52] @ 16.5°
				1.44684 [73] @ 12°
					$\frac{dD}{dt} = -0.001169/°C.$ (0° to 25°)
					$\frac{dn}{dt} = -0.000471/°C.$ (10° to 25°)

2,4-Dimethyl-pentadiene-1,4
C=C-C-C=C
  | |
  C   C
		81.3 [181]	0.7116 [181]	1.4140 [181]	

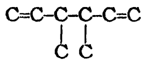
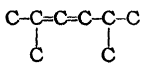
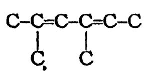
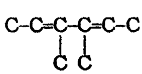
2,4-Dimethyl-pentadiene-2,4
C-C=C=C-C
  | |
  C   C
		86.5 [74] @ 763mm
		70 [75]
			0.7343 [74] @ 0°	1.42473 [74] @ 22°	

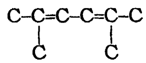
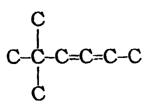
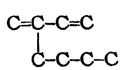
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2-Isopropyl-butadiene-1,3 C=C–C=C | C–C | C		86 to 87 [157]	0.7276 [157] @ 24.5°	1.4321 @ 23°	
C_8H_{14} **Octadiene-1,5** C=C–C–C–C=C–C–C		117.5 to 118 [178]	0.7320 [178]	1.4264 [178]	
Octadiene-1,6 C=C–C–C–C–C=C–C		122 to 125 [89]	0.741 [89] @ 29°	1.4328 [89] @ 29°	
Octadiene-1,7 C=C–C–C–C–C–C=C		117.5 [181]	0.7320 [181]	1.4211 [181]	
Octadiene-2,4 (Mixtures of geometrical isomers) C–C=C–C=C–C–C–C		133.5 to 134 [76] 133.5 to 134 [191]	0.7427 [76] @ 25°	1.4542 [76] @ 25°	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Octadiene-2,6 Dicrotyl (Mixtures of geometrical isomers) C–C=C–C–C–C=C–C		113 to 114 [76] 117 to 119 [77]	0.7420 [76] @ 19°	1.4324 [76] @ 12°	
Octadiene-2,6 *trans-trans* Dicrotyl C–C=C–C–C–C=C–C	− 76 [59]	124.0 [169] @ 747mm	0.736 [169] @ 19°	1.436 [169] @ 19°	
2-Methylheptadiene-1,3 C=C(–C)–C=C–C–C–C		130.7 [81]	0.7673 [81] @ 13°	1.4605 [81] @ 13°	
6-Methylheptadiene-1,4 C=C–C–C=C–C(–C)–C		116 to 118 [28]	0.7401 [28] @ 22°		
3-Methylheptadiene-1,5 C=C–C(–C)–C–C=C–C		110 to 111 [89]	0.7289 [89]	1.4258 [89]	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
4-Methylheptadiene-1,5 C=C-C-C-C=C-C (C on the 4th carbon)		109.8 to 110.4 [178] 110.5 to 110.9 [83]	0.7284 [83] @ 25° 0.7288 [178]	1.4213 [83] @ 25.1° 1.4293 [178]	
2-Methylheptadiene-1,6 C=C-C-C-C-C=C (C on the 2nd carbon)		115.6 [181]	0.7357 [181]	1.4261 [181]	
3-Methylheptadiene-2,4 (Mixtures of geometrical isomers) C-C=C-C=C-C-C (C on the 3rd carbon)		132 to 135 [51]	0.7687 [51] @ 14.7° 0.7783 [51] @ 0°	1.46493 [51] @ 14.7°	
4-Methylheptadiene-2,4 (Mixtures of geometrical isomers) C-C=C-C=C-C-C (C on the 4th carbon)		131 to 132 [84] 131 [15]	0.7551 [84] @ 25° 0.763 [15]	1.46211 [84] @ 25° 1.4625 [15]	

Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D^{20}_4	n^{20}_D	*Additional Data*
6-Methylheptadiene-2,4 (Mixtures of geometrical isomers) C–C=C–C=C–C–C │ C		117 [15] 114 to 116 [12] 30 @ 12mm [188]	0.7401 [12] @ 25° 0.733 [15] 0.7516 [12] @ 0°	1.4505 [15] 1.4397 [12]	
4-Ethylhexadiene-1,4 C=C–C–C=C–C │ C–C		122 to 123 [85]	0.7741 [85] @ 0°		
2,5-Dimethyl-hexadiene-1,3 C=C–C=C–C–C │ │ C C		116 to 118 [47]	0.7412 [47]	1.45024 [47]	
2,5-Dimethyl-hexadiene-1,5 C=C–C–C–C=C │ │ C C		100 to 102 [91] 113 to 114 [86,87] 113.5 [181] 137 [88] @ 755mm	0.7472 [88] @ 21° 0.7512 [86] 0.7403 [181]	1.43995 [88] @ 21° 1.4309 [86] 1.4288 [181]	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C.* @ 760mm	D_4^{20}	n_D^{20}	*Additional Data*
3,4-Dimethyl-hexadiene-1,5 		100 [89]	0.7226 [89] @ 24°	1.419 [89] @ 24°	
2,5-Dimethyl-hexadiene-2,3 	−80 [47]	119 to 123 [47]	0.7637 [47]	1.45054 [47]	
2,4-Dimethyl-hexadiene-2,4 		114 to 115 [51]	0.7635 [51] @ 16.5° 0.7714 [51] @ 0°	1.45457 [51] @ 16.5°	$\frac{dD}{dt} = -0.000479$/°C. (0° to 15°)
3,4-Dimethyl-hexadiene-2,4 (Mixtures of geometrical isomers) 		132 to 134 [90] 71 to 72 [90] @ 100mm	0.7832 [90] @ 19.2°	1.4630 [90] @ 25°	

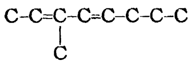
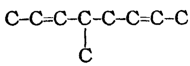
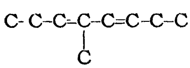
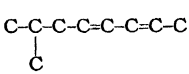
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_{4}	n^{20}_{D}	Additional Data
2,5-Dimethyl-hexadiene-2,4 Diisocrotyl 	0 [94] 4 to 5 [93] 6 [95] 11 [92] 14.5 [96]	134 to 135 [94] @ 768.8mm 132 to 134 [95] 134.6 [96] 125 to 130 [93] 75 [92] @ 100mm	0.7726 [93] @ 18° 0.7646 [96] @ 17.8°	1.4796 [96] @ 19.5°	
2,2-Dimethyl-hexadiene-3,4 (Mixtures of geometrical isomers) 		107.4 to 108 [83]	0.7375 [83] @ 25°	1.4425 [83] @ 25°	
2-Butylbutadiene-1,3 		44 to 45 [181] @ 49mm			
C_9H_{16} **Nonadiene-1,5** C=C–C–C–C=C–C–C–C		142.2 to 143 [178]	0.7438 [178]	1.4310 [178]	

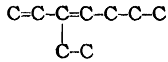
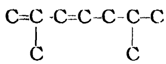
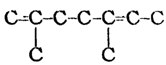
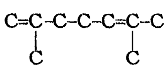
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Nonadiene-2,6 (Mixtures of geometrical isomers) C-C=C-C-C-C=C-C-C		140.6 to 146.6 [178]	0.7499 [178]	1.4332 [178]	
Nonadiene-1,8 C=C-C-C-C-C-C-C=C		142.8 [181]	0.7431 [181]	1.4272 [181]	

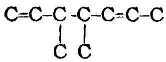
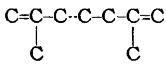
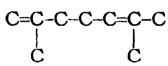
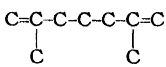
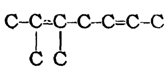
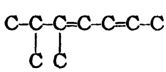
3-Methyloctadiene-1,5
C=C-C-C-C=C-C-C
      |
      C
		135.6 to 136.2 [178]	0.7454 [178]	1.4309 [178]	

4-Methyloctadiene-1,5
C=C-C-C-C=C-C-C
         |
         C
		132.9 to 133.5 [178]	0.7413 [178]	1.4291 [178]	

2-Methyloctadiene-1,7
C=C-C-C-C-C-C=C
   |
   C
		141.6 [181]	0.7532 [181]	1.4351 [181]	

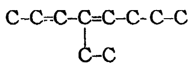
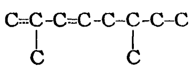
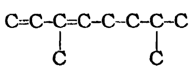
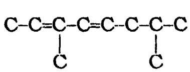
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
3-Methyloctadiene-2,4 (Mixtures of geometrical isomers) 		155 to 157 [81] @ 750mm	0.7817 [81] @ 13°	1.4626 [81] @ 13°	
4-Methyloctadiene-2,6 (Mixtures of geometrical isomers) 		134 to 134.6 [178]	0.7465 [178]	1.4310 [178]	
4-Methyloctadiene-3,5 (Mixtures of geometrical isomers) 		148 to 151 [63] 150 [15]	0.7640 [63] @ 25° 0.771 [15]	1.46285 [63] @ 25° 1.4663 [15]	
2-Methyloctadiene-4,6 (Mixtures of geometrical isomers) 		149 [12,15]	0.751 [15] 0.7521 [12] @ 18° 0.7653 [12] @ 0°	1.4553 [15] 1.4543 [12] @ 18°	

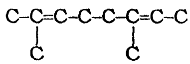
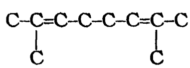
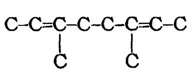
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
3-Ethylheptadiene-1,3 		84 to 86 [97] @ 102mm			
2,6-Dimethyl-heptadiene-1,3 Isogeraniolene 		140 to 141 [98] 143 to 145 [73] @ 755mm 31 @ 7mm [103]	0.7923 [103] @ 22° 0.7648 [73] @ 10°	1.4606 [103] @ 22° 1.45409 [98] 1.46202 [73] @ 10°	
2,5-Dimethyl-heptadiene-1,5 		144 to 146 [51] 117 to 119 [186]	0.7404 [186] 0.7752 [51] @ 14° 0.7853 [51] @ 0°	1.4339 [186] 1.46335 [51]	
2,6-Dimethyl-heptadiene-1,5 		140 to 142 [100] 140 to 143 [104] @ 745mm	**0.7648** 0.7626 [100] @ 22° 0.7750 [104] @ 11°	**1.4442_4** 1.44361 [100] @ 22° 1.44707 [104] @ 11°	$\frac{dD}{dt} = -0.0011/°C.$ (11° to 22°) $\frac{dn}{dt} = -0.000315/°C.$ (11° to 22°)

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
3,4-Dimethyl-heptadiene-1,5 		131.2 to 131.7 [178]	0.7463 [178]	1.4313 [178]	
2,6-Dimethyl-heptadiene-1,6 		139.6 [178]	0.7539 [178]	1.4341 [178]	
2,6-Dimethyl-heptadiene-1,5 or 1,6 Geraniolene  or 		127 [66] @ 740mm			
2,3-Dimethyl-heptadiene-2,5 or 3,5  or 		128 [142] @ 732mm	0.7478 [142]	1.4489 [142]	

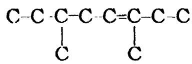
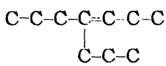
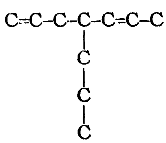
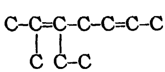
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2-Methyl-3-ethyl-hexadiene-1,5 C–C C–C C–C | | C C C	−70[21]	142 to 143[21,99] 144 to 145[65]	0.757[99] 0.7649[65] @ 17.4°	1.4368[99] 1.44319[65] @ 15.1°	
2,5,5-Trimethyl-hexadiene-1,3 C | C–C–C=C–C–C | | C C		146 to 149[101]			
$C_{10}H_{18}$ **Decadiene-1,3** C=C–C=C–C–C–C–C–C–C		168 to 170[105]	0.750[105]		
Decadiene-1,9 C=C–C–C–C–C–C–C–C=C		170[106]			

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
Decadiene-2,8 (Mixtures of geometrical isomers) C–C=C–C–C–C–C–C=C–C		168 [183] @ 740mm	0.7665 [183] $D^{20.5}_{18}$	1.4370 [183] @ 22°	
Decadiene-3,7 (Mixtures of geometrical isomers) C–C–C=C–C–C–C=C–C–C		166.5 [107] @ 742mm	0.7559 [107] @ 23°	1.4356 [107] @ 23°	
4-Methylnonadiene-3,5 (Mixtures of geometrical isomers) C–C–C=C–C=C–C–C–C with C on the fourth carbon		170 to 172 [81] @ 745mm	0.7873 [81] @ 13°	1.4595 [81] @ 13°	
3-Ethyloctadiene-1,5 C=C–C–C–C=C–C–C with C–C on the third carbon		156 [107] @ 742mm	0.7540 [107] @ 23°	1.4324 [107] @ 23°	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
4-Ethyloctadiene-2,4 (Mixtures of geometrical isomers) 		105 to 107 [97] @ 90 to 95mm			
2,6-Dimethyl-octadiene-1,3 		58 [103] @ 12mm	0.7933 [108]	1.456 [103]	
3,7-Dimethyl-octadiene-1,3 		162 to 163 [163]	0.7439 [163]	1.4450 [163]	
3,7-Dimethyl-octadiene-2,4 (Mixtures of geometrical isomers) 		164 to 167 [51] 58 [103] @ 12mm	0.7933 [103] @ 22° 0.7832 [51] @ 14.5° 0.7939 [51] @ 0°	1.456 [103] 1.46650 [51] @ 14.5°	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2,6-Dimethyl-octadiene-2,6 (Mixtures of geometrical isomers) 		166 to 168 [112] @ 761mm 171.5 to 173.5 [113] 168 to 170 [165] 165 to 166 [104] 165 to 167 [114] @ 750mm 89 @ 52mm [104] 75 @ 30mm [112]	0.775 [115] @ 21° 0.7802 [113] 0.7792 [112] @ 15° 0.7811 [114] @ 14.4° 0.7918 [104] @ 12° 0.7916 [114] @ 0°	1.4501 [113] 1.45102 [114] @ 15.8° 1.45245 [104] @ 15° 1.4497 [112] @ 10°	
2,7-Dimethyl-octadiene-2,6 		163.5 to 164.5 [117] 161 to 163 [116]	0.7849 [116]	1.44814 [116]	
3,6-Dimethyl-octadiene-2,6 (Mixtures of geometrical isomers) 		153 to 155 [116]	0.7767 [116]	1.44453 [116]	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
4,5-Dimethyl-octadiene-2,6					
(Mixtures of geometrical isomers) C-C=C-C-C-C=C-C (C on C-4 and C-5)		152.9 to 153.8 [83]	0.7611 [83] @ 25°	1.4375 [83] @ 25.1°	
2,6-Dimethyl-octadiene-2,7			**0.7617**	**1.4359**	
β-Linaloolene C-C=C-C-C-C-C=C (C on C-2 and C-6)		158 to 160 [165] @ 761mm 160 to 161 [164] 161 to 162 [163] 165 to 168 [118]	0.7882 [118] 0.7601 [163] 0.7580 [164]	1.455 [118] 1.4362 [163] 1.4358 [164, 165]	
2,5-Dimethyl-octadiene-3,5					
(Mixtures of geometrical isomers) C-C-C=C-C=C-C-C (C on C-2 and C-5)		165 [84]	0.7754 [84] @ 25°	1.46136 [84] @ 25°	

Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
3,6-Dimethyl-octadiene-3,5 (Mixtures of geometrical isomers) 		167 to 170 [119]			
4-Propylheptadiene-1,4 		158 [120]	0.7721 [120] @ 15° 0.7840 [120] @ 0°		
4-Propyheptadiene-1,5 		156.2 to 156.6 [191]	0.7501 [191] @ 25°	1.4310 [191] @ 25°	
2-Methyl-3-ethyl-heptadiene-2,5 		158 to 161 [101]			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
3,4-Diethyl-hexadiene-1,5					
C=C-C-C-C=C C-C C-C		144 [107] @ 742mm	0.7526 [107] @ 23°	1.4315 [107] @ 23°	
3,4-Diethyl-hexadiene-2,4					
(Mixtures of geometrical isomers)		158 to 163 [153]			
C-C=C-C=C-C C-C C-C					
2,6-Dimethyl-octadiene-1 or 2, 6 or 7			**0.7758**	**1.4481**	$\frac{dD}{dt} = -0.000878/°C.$ (0° to 25°)
Linaloolene Dihydromyrcene Dihydroocimene C=C-C-C-C-C-C-C C C		169 to 171 [110] @ 764mm 161 [111] @ 763mm 168 [109] 62 to 63 [53] @ 17mm 58 [109] @ 12mm	0.768 [111] @ 25° 0.7767 [53] 0.775 [110] 0.7824 [104] @ 15° 0.792 [110] @ 0°	1.4492 [110] 1.4482 [110] 1.4458 [111] 1.45251 [109] @ 15°	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Undecadiene-1,10			**0.768**	**1.4382**	
C=C–(C)$_7$–C=C		187 [122] @ 755mm 76 [122] @ 12mm 70 to 72 [106] @ 0mm	0.769 [106] 0.7671 [122]	1.4398 [106] 1.43497 [122]	
2-Methyldecadiene-1,3					

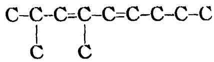
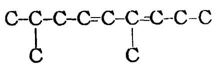
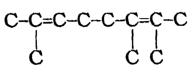
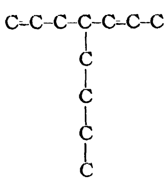
C=C–C=C–C–C–C–C–C–C
  |
  C
		184 [123]			

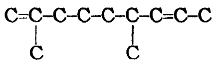
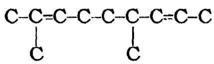
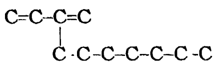
5-Methyldecadiene-4,6					
(Mixtures of geometrical isomers)		187 to 188 [81] @ 742mm	0.7858 [81] @ 14°	1.4603 [81] @ 14°	

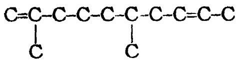
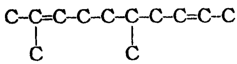
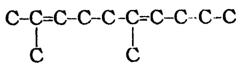
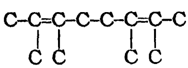
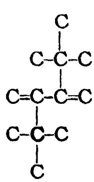
C–C–C–C=C–C=C–C–C–C
        |
        C					

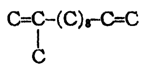
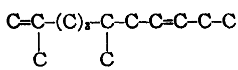
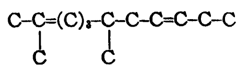
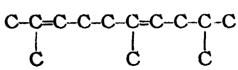
2,6-Dimethyl-nonadiene-2,6					
(Mixtures of geometrical isomers)		181 to 183 [104] @ 746mm	0.8007 [104] @ 10°	1.45807 [104] @ 10°	

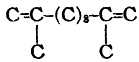
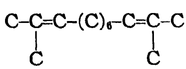
C–C=C–C–C–C=C–C–C
  | |
  C C					

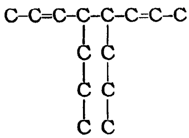
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2,4-Dimethyl-nonadiene-3,5 (Mixtures of geometrical isomers) 		181 to 183 [81] @ 752mm	0.7931 [81] @ 14°	1.4573 [81] @ 14°	
2,6-Dimethyl-nonadiene-4,6 (Mixtures of geometrical isomers) 		185 to 189 [84]	0.7779 [84] @ 25°	1.46189 [84] @ 25°	
2,6,7-Trimethyl-octadiene-2,6 		182 to 183 [104] @ 756mm	0.8100 [104] @ 11°	1.46085 [104] @ 11°	
4-Butylheptadiene-1,5 		110.1 to 111.1 @ 85mm [191]	0.7565 [191] @ 25°	1.4342 [191] @ 25°	

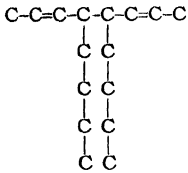
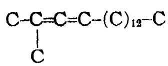
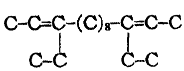
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2,6-Dimethyl-nonadiene-1,7 or 2,7					
 or 		61 to 62 [124] @ 9mm	0.7730 [124]		
3-Heptybutadiene-1,3 3-Methylenedecene-1					
Heptoprene 		52 to 54 [161] @ 5mm	0.7796 [161]	1.4511 [161]	
$C_{12}H_{22}$ Dodecadiene-1,11					
$C{=}(C)_{10}{=}C$		207 [156]			
Dodecadiene		79 to 84 [125] @ 11mm	0.779 [125] @ 22°	1.444 [125] @ 22°	Perhaps a mixture of isomers.

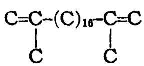
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2,6-Dimethyl-decadiene-1,8 and 2,8  and 		81 to 82 [126] @ 9mm	0.7813 [126]		$[\alpha]_D^{20} = -6.64°$ [126]
2,6-Dimethyl-decadiene-2,6 (Mixtures of geometrical isomers) 		201 to 202 [104] @ 747mm			
2,3,6,7-Tetramethyl-octadiene-2,6 		87.5 to 88.5 [127] @ 18mm	0.7971 [127] @ 25°	1.45963 [127] @ 25°	
2,3-Di-*tert*-butyl-butadiene-1,3 		168 to 170 [128]	0.7754 [128] @ 15°	1.43648 [128] @ 15°	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Oleatridecadiene		83 to 85 [170] @ 5mm	0.8552 [170] @ 18°	1.4686 [170] @ 16°	
2-Methyl-dodecadiene-1,11 		152 [123] @ 67mm			
2,6-Dimethyl-undecadiene-1,8 and 2,8  and 		90 to 91 [124] @ 8mm	0.7873 [124]	1.44903 [124]	$[\alpha]_D^{20} = -6.68°$ [124]
2,6,9-Trimethyl-decadiene-2,6 		214 [104] @ 742mm	0.8037 [104] @ 11°	1.45967 [104] @ 11°	

Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2,11-Dimethyl-dodecadiene-1,11					$\frac{dD}{dt} = -0.0007010/°C.$ (0° to 100°)
		239 to 241 [150]	0.7437 [150] @ 99° 0.7581 [150] @ 90° 0.7653 [150] @ 80° 0.7725 [150] @ 70° 0.7798 [150] @ 60° 0.7869 [150] @ 50° 0.7932 [150] @ 40° 0.7992 [150] @ 30° 0.8066 [150] 0.8148 [150] @ 10° 0.8220 [150] @ 0°		
2,11-Dimethyl-dodecadiene-2,10					
		239.5 to 240.5 [129]	0.7932 [129] @ 19°	1.4535 [129] @ 19°	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
4,5-Dipropyl-octadiene-2,6					
(Mixtures of geometrical isomers) 		221 to 222 [191] @ 76mm	0.7804 [191] @ 25°	1.4472 [191] @ 25°	
$C_{16}H_{30}$ Hexadecadiene-1,15					
C=C–(C)$_{12}$–C=C	−14 to −12 [122]	142 to 147 [122] @ 6mm	0.8149 [122] @ 18°	1.45612 [122] @ 18°	
Oleahexadecadiene					
		133 [170]	0.8609 [170] @ 18°	1.4785 [170] @ 16°	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
4,5-Di-*n*-butyl-octadiene-2,6					
(Mixtures of geometrical isomers) 		148.7 to 150.7 @ 25mm [191]	0.7949 [191] @ 25°	1.4528 [191] @ 24.9°	
$C_{18}H_{34}$ **2-Methyl-heptadecadiene-2,3** (?)					
(Mixtures of geometrical isomers) 		185 to 188 [130]	0.845 [130] @ 0°		
3,12-Diethyltetra-decadiene-2,12					
(Mixtures of geometrical isomers) 		168 [162] @ 16mm	0.8121 [162]	1.44431 [162] @ 16.1°	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Oleanonadecadiene					
		155 [170]	0.8640 [170] @ 18°	1.4810 [170] @ 16°	
$C_{20}H_{38}$					
Eicosadiene-1,19					
C=C–$(C)_{16}$–C=C	20.3 [131] 30 to 32 [158]	175 [131] @ 2.5mm			
$C_{22}H_{42}$					
2,19-Dimethyl-eicosadiene-1,19					This is a mixture of isomers
	0 [150]	264 to 266 [150] @ 158 mm 239.5 to 240.5 @ 21mm [150]	0.7636 [150] @ 99° 0.7696 [150] @ 90° 0.7764 [150] @ 80° 0.7832 [150] @ 70° 0.7909 [150] @ 60° 0.7976 [150] @ 50° 0.8043 [150] @ 40° 0.8110 [150] 0.8201 [150] @ 15° 0.8245 [150] @ 10°		

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2-Methyl-tricosadiene-2,14 (Mixtures of geometrical isomers)		210.5 to 211.5 @ 3.5mm [146]			
$C-\underset{\underset{C}{\vert}}{C}=C-(C)_{10}-C=C-(C)_8$					
$C_{30}H_{58}$ Octahydrosqualene		229 to 234 [167] @ 3mm	0.8200 [167]	1.4625 [167]	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Tetratriacontadiene-9,25					
(Mixtures of geometrical isomers)	20.5 to 21 [149] 22.5 [131]		0.8412 [149] @ 22°	1.4655 [149] @ 22°	
C–(C)$_7$–C=C–(C)$_7$–(C)$_7$–C=C–(C)$_7$–C					
$C_{36}H_{70}$ **Hexatriacontadiene** (?)	48 to 49 [132]				
$C_{44}H_{82}$ **Tetratetracontadiene** (?)	60 to 62 [132]				
Phytadiene		186 to 187 [139] @ 13mm 185 to 188 [140] @ 13mm	0.826 [139] @ 0°		

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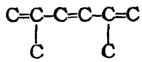
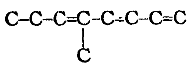
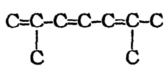
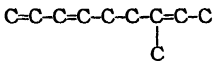
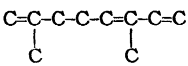
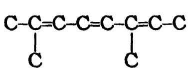
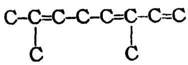
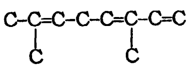
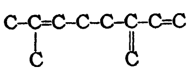
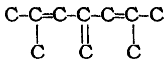
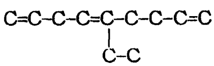
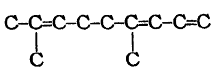
Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Hexatriene-1,3,4					
C=C–C=C=C–C		113 to 114 [1]	0.764 [1]	1.50786 @ $n_\alpha^{19.8}$ 1.53743 @ $n_\beta^{19.8}$	
Hexatriene-1,3,5					
(Mixtures of *cis*, *trans* isomers) C=C–C=C–C=C		77 to 78.5 [2] @ 764.4mm 77.5 [3]	0.7175 [2]	1.4577 [2] 1.4884 [3] @ 13.5°	
C_7H_{10} **Heptatriene-1,3,5**					
(Mixtures of *cis*, *trans* isomers) C=C–C=C–C=C–C	−14.5 [4]				
Heptatriene-1,3,6					
(Mixtures of *cis*, *trans* isomers) C=C–C=C–C–C=C		115 [5]			

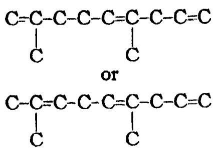
<table>
<tr><th>Name and Carbon Skeleton</th><th>M. P., °C</th><th>B. P., °C.
@ 760mm</th><th>D_4^{20}</th><th>n_D^{20}</th><th>Additional Data</th></tr>
<tr><td>Octatriene-2,4,6
(Mixtures of cis, trans isomers)
C-C=C-C=C-C=C-C</td><td>52.5 [6]</td><td>147 to 148 [6] @ 764mm
125 to 130 [2]
43 @ 10mm [6]</td><td>0.7961 [6] @ 23°
0.8394 [2] @ 18°</td><td>1.5131 [6] @ 27°
1.45193 [2] @ 18°</td><td></td></tr>
<tr><td>2-Methyl-heptatriene-2,4,6
(Mixtures of cis, trans isomers)
C-C=C-C=C-C=C
  |
  C</td><td></td><td>99 to 101 [7] @ 215mm
42 to 44 [7] @ 14mm</td><td></td><td></td><td></td></tr>
<tr><td>3-Methyl-heptatriene-2,4,6
(Mixtures of cis, trans isomers)
C-C=C-C=C-C=C
    |
    C</td><td>−90 to −85 [9]</td><td>82 to 83.5 [9] @ 96mm</td><td>0.7938 [9] @ 10.8°</td><td>1.53301 [9] @ 15.3°</td><td></td></tr>
<tr><td>2-Methyl-heptatriene-2,5,6
C-C=C-C-C=C=C
  |
  C</td><td></td><td>77 to 82 [8] @ 80mm</td><td></td><td></td><td></td></tr>
</table>

Name and Carbon Skeleton	*M. P., °C*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2,5-Dimethyl-hexatriene-1,3,5 (Mixtures of *cis, trans* isomers) 		124 to 126 [10]	0.778 [10] @ 15°	1.483 [10] @ 15°	
C_9H_{14} **4-Methyl-octatriene-3,5,7** (Mixtures of geometrical isomers) 	−70 [9]	162 to 167 [9] 85 to 87 [9] @ 36mm	0.802 [9] @ 19.3°	1.519 [9] @ n_α^{22} 1.548 [9] @ n_β^{22}	
2,6-Dimethyl-heptatriene-1,3,5 (Mixtures of *cis, trans* isomers) 	−23 to −22 [11]	53 to 54 [11] @ 10mm	0.7951 [11]	1.5276 [12]	

Name and Carbon Skeleton	*M. P., °C*	*B. P., °C.* @ 760mm	D_4^{20}	n_D^{20}	*Additional Data*
7-Methyl-nonatriene-1,3,7					
Cryptotaenene (Mixtures of *cis*, *trans* isomers) 		67 to 68 [13] @ 15mm	0.8128 [13] @ 25°	1.47476 [13] @ 25°	$[\alpha]_D^{19.8} = +2.66°$
2,6-Dimethyl-octatriene-1,5,7					
Ocimene (Mixtures of geometrical isomers) 		81 @ 30mm [14] 72 to 74 [15] @ 19mm	0.7989 [15] @ 30° 0.8031 [14] @ 15°	1.48436 [15] @ 19° 1.4857 [14] @ 18°	
2,6-Dimethyl-octatriene-2,4,6					
Alloocimene (Mixtures of *cis*, *trans* isomers) 		193 [7] @ 739mm 81 to 83 [16] @ 13mm 81 @ 12mm [14] 79 to 80 [7] @ 12mm	0.8172 [14] @ 16°	1.5420 [16] @ 18° 1.5296 [14] @ 16°	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2,6-Dimethyl-octatriene-2,5,7 (High boiling) 		188 [17] @ 750mm 95 @ 24mm [17] 81 @ 12mm [17]	0.899 [17] @ 21.5° 0.8133 [17] @ 15°	1.5447 [17] @ 21°	
2,6-Dimethyl-octatriene-2,5,7 (Low boiling) 		176 to 178 [19] (Decom-position) 81 @ 30mm [18] 73 to 74 [19] @ 21mm	0.799 [14] @ 21°	1.4861 [19] 1.4857 [18] @ 18°	
2-Methyl-6-Methylene-octadiene-2,7 (Myrcene) 		**171** 166 to 168 [20] @ 774mm 171 to 172 [24] @ 760mm 70 @ 25mm [22] 67 to 68 [24] @ 20mm 62 to 63 [25] @ 17mm 56 to 58 [36] @ 15mm 56 to 57 [23] @ 12mm 51 to 51.5 [21] @ 8.5mm	**0.797** 0.799 [24] @ 21° 0.7937 [25] 0.7982 [23] 0.8028 [22] @ 15.8° 0.8047 [21] @ 15° 0.8046 [20] @ 15° 0.8023 [24] @ 15° 0.8013 [17] @ 15°	**1.472** 1.4722 [21] 1.4716 [25] 1.47065 [23] 1.4645 [20] 1.4700 [17] @ 19° 1.46684 [22] @ 15.8° 1.47 [33] @ 15°	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
2,6-Dimethyl-4-Methyleneheptadiene-2,5 		55 to 57 [26] @ 14mm			
$C_{11}H_{18}$					
5-Ethylnonatriene-1,4,8 (Mixtures of geometrical isomers) 		92 to 93 [27] @ 63mm 74 @ 41mm [27]	0.8000 [27] @ 12.8°	1.45941 [27] @ 14.8°	
2,6-Dimethyl-nonatriene-2,6,8 (Mixtures of geometrical isomers) 		195 to 197 [28] @ 750mm 76 to 78 [28] @ 8mm	0.814 [28] @ 11.3° 0.8215 [28] @ 0°	1.48686 [28] @ 11.3°	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_{4}	n^{20}_{D}	Additional Data
2,6-Dimethyl-nonatriene-1 or 2,5,8 (Mixtures of geometrical isomers are possible in either case) 		81 to 82 [27]	0.8162 [27] @ 18.8°	1.47388 [27] @ 17.9°	
$C_{12}H_{20}$ **Dodecatriene**		90 to 95 [29] @ 15mm			
$C_{13}H_{22}$ **2,6-Dimethyl-undecatriene-1 or 2,8,10**		94 to 95 [31] @ 8mm	0.8005 [31]	1.47261 [31]	$[\alpha]^{20}_{D} = -10.12°$ [31]
2,6-Dimethyl-undecatriene-1 or 2, 5 or 6, 8		224 to 225 [30] @ 751mm	0.8151 [30] D^{20}_{0}	1.4725 [30]	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Dihydroaplatoxen					
		154 to 157 [32]	0.8177 [32] @ 21°	1.47105 [32]	
$C_{23}H_{42}$ **Oleatricosatriene**					
		205 to 210 [34]	0.8710 [34] @ 18°	1.4910 [34] @ 16°	
$C_{30}H_{56}$ **Hexahydrosqualene**					
		232 to 234 [35] @ 3mm	0.8334 [35] D_{20}^{20}	1.4710 [35]	

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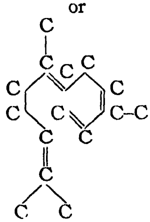
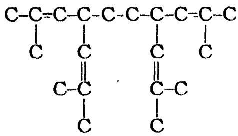
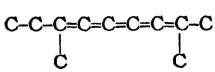
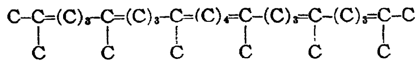
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_4	n^{20}_D	*Additional Data*
Decatetraene-2,4,6,8					
(Mixtures of geometrical isomers)	125 [1]				
C–C=C–C=C–C=C–C=C–C					
$C_{15}H_{24}$ 3,7,11-Trimethyldodecatetraene-1,3,6,10					
α Farnesene		128 to 130 [2] @ 12mm	0.877 [3] @ 18°	1.49951 [3]	
(Mixtures of geometrical isomers)		129 to 132 [3] @ 12mm	0.8385 [2] @ 18°	1.4965 [2] @ 18°	
C=C–C=(C)$_3$=C–(C)$_3$=C–C C C C					
or 					
$C_{17}H_{28}$ Heptadecatetraene					
		153 to 155 [4] @ 11mm	0.831 [4] @ 21°	1.483 [4]	$[\alpha]_D = 0°$ [4]

Name and Carbon Skeleton	M. P., °C	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
2,9-Dimethyl-4,7-di (isobuten-1-yl)-decadiene 2,8 		195 to 196 [8] @ 58mm			
$C_{28}H_{50}$ Oleaoctacosatetraene		205 to 210 [5]	0.8736 [5] @ 18°	1.5020 [5] @ 16°	
$C_{30}H_{54}$ Tetrahydrosqualene		236 [7] @ 3mm	0.8428 [7]	1.4800 [7]	
5. Alkapentaenes or Pentaolefins					
$C_{11}H_{14}$ 3,8-Dimethyl-nonapentaene (Mixtures of geometrical isomers) 		74 to 75 [9] @ 10mm			

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_{4}	n^{20}_{D}	*Additional Data*
Tetradecahexaene-2,4,6,8,10,12					
(Mixtures of geometrical isomers)	205 [1]				
C–C=C–C=C–C=C–C=C–C=C–C=C–C					
$C_{29}H_{48}$					
4,7,10,14,17,20-Hexamethyltricosa-hexaene-3,8,10,13,15,20					
Spinacene	−20 [10]	280 [10] @ 17mm	0.8601 [10]	1.4967 [10]	
(Mixtures of geometrical isomers)		260 [11] @ 9mm	0.8604 [11]	1.4956 [11]	
C–(C)$_2$=C–(C)$_2$–C–C=C–C=(C)$_3$=C–C=C–C–(C)$_2$–C=(C)$_3$ with a C under each of the six marked carbons			0.8635 [10] @ 15°		

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
2,6,10,15,19,23-Hexamethyltetracosa-hexaene-2,6,10,14,18,22			**0.860 @ 15°**		
Squalene 		284 to 285 [14] @ 25mm 262 to 264 [12] @ 10mm 260 to 262 [13] @ 9mm 252 to 254 [12] @ 5mm	0.8598 [14] @ 15° 0.8587 [12] @ 15° 0.8603 [11] @ 15°	1.4965 [12,13] 1.4963 [14] @ 15°	Heilbron proved spinacene and squalene are identical [16]

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IV. PHYSICAL CONSTANTS OF ALKYNES OR ACETYLENES

1. Alkynes or Acetylenes
2. Alkadiynes or Diacetylenes
3. Mixed Alkene-Alkynes of the Aliphatic Series

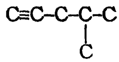
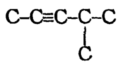
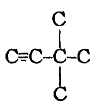
Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Ethyne	**−81.8**		**0.6179** [2] **@ −81.8°**		$\frac{dD}{dt} = -0.001563$ (−55 to −85)[12]
Acetylene C≡C	−81 [3] −81.0 [2] −81.5 [7] −81.8 [1,8,12]	−82.2 [5] −82.4 [6] −83.6 [1,4,12] −83.6 [1] (Sublimation point) −84.0 [9] −85 [3]	0.5185 [4] @ −23.75° 0.5763 [12] @ −55.2° 0.5779 [12] @ −56° 0.5875 [12] @ −62.5° 0.5935 [12] @ −66.35° 0.6009 [12] @ −70.85° 0.6093 [12] @ −76.15° 0.6136 [12] @ −79.15° 0.6154 [12] @ −80.3° 0.6181 [12] @ −81.8° 0.6208 [2] @ −83.6°		

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Propyne	**−101.5**	**−23.3**	**0.6714_0 @ −23.3°**	**1.3746 @ −23.3°**	$\frac{dD}{dt} = -0.001165$[12] (0° to −60°) $\frac{dn}{dt} = -0.007006$ (−23° to −40°)
C≡C–C	−101.5[2] −104.7[12] −110[13]	−23[85] −23.3[2] −23.5[13] −27.5[12]	0.6447[84] @ −0.5° 0.6582[84] @ −12.7° 0.6600[12] @ −12.9° 0.6617[84] @ −14.4° 0.6652[84] @ −17.5° 0.6710[84] @ −22.7° 0.6698[2] @ −23.3° 0.6759[12] @ −26.5° 0.6827[84] @ −32.5° 0.6873[84] @ −36.8° 0.6911[84] @ −40.9° 0.6936[84] @ −42.4° 0.6992[84] @ −47.4° 0.7039[84] @ −51.9° 0.7065[84] @ −53.1° 0.7128[12] @ −55.3° 0.7109[84] @ −57.0°	1.3746[75] @ −23.3° 1.3863[75] @ −40°	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Butyne-1	**−122.5**	**8.6**	**0.6682 @ 8.6°**		[15,16,17] are wrong values and were not averaged with the rest.
C≡C–C–C	−122.5 [2] −130 [16] −137 [14]	7.9 [85] 8.5 [14] 8.6 [2] 14 to 14.5 [17] 18 [15] 18.5 [16]	0.6682 [2] @ 8.6° 0.668 [16] @ 0°		
Butyne-2			**0.6937**	**1.3939**	$\frac{dD}{dt} = -0.001044$ (0° to 30°)
C–C≡C–C	−24.0 [2] −32.5 [19]	27.1 [2] 27.2 [19] 27.2 to 27.6 [87] 28 [20,21] 27 to 28 [18] @ 734.8mm	0.6873 [2] @ 27.1° 0.688 [19] @ 25° 0.697 [20] @ 16° 0.715 [19] @ 0°	1.3893 [19] @ 25° 1.3975 [20] @ 16°	$\frac{dn}{dt} = -0.0009111$ (16° to 25°)
C_5H_8 **Pentyne-1**	**−98**	**39.7**	**0.695_0**	**1.386_0**	$\frac{dD}{dt} = -0.00118$/°C. (0° to 40°)
C≡C–C–C–C	−95 [14] −98.0 [2]	39.3 [85] 39.7 [2] 39.5 to 40 [22] 40 [14] 48 to 49 [23] 39.5 to 40.5 [68]	0.6714 [2] @ 39.7° 0.6909 [85] @ 25° 0.694 [22] @ 17° 0.7221 [14] @ 0°	1.38270 [85] @ 25° 1.388 [22] @ 17°	$\frac{dn}{dt} = -0.000663$/°C. (15° to 25°)

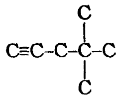
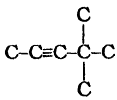
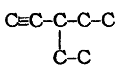
Name and Carbon Skeleton	M. P.,°C.	B. P.,°C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Pentyne-2					
C–C≡C–C–C	−101 [24]	50 to 55 [22] 55.5 [24] 55.5 to 56 [25]	0.7127 [24] @ 17.2°	1.4045 [24] @ 17.2°	
3-Methylbutyne-1		**28**	**0.665**		$\frac{dD}{dt} = -0.00102/°C.$ (0° to 20°)
C≡C–C–C with C on the third C	- --	27.5 to 28.5 [74] 28 to 29 [26] @ 751mm	0.666 [74] @ 19° 0.6854 [26] @ 0°	1.3785 [74] @ 19°	
C_6H_{10} **Hexyne-1**			**0.7195$_3$**	**1.3990$_3$**	$\frac{dD}{dt} = -0.0009719/°C.$ (15° to 45°)
C≡C–C–C–C–C	−124 [31]	71.5 to 72 [33] @ 765mm 68 to 70 [28] 70 to 72 [83] 70.5 to 72 [29] 71.0 [85] 71 to 72 [27,30] 71.35 71.4 [31] 35 [77] @ 200mm 4.7 [75] @ 50mm	0.69521 [78] @ 45° 0.7146 [85] @ 25° 0.721 [27] 0.71976 [78] 0.720 [30] @ 17° 0.7193 [31] @ 15° 0.736 [33] @ 0°	1.3936 [75] @ 30° 1.39621 [85] @ 25° 1.3992 [75] 1.402 [27,30] @ 19° 1.4095 [75] @ 0° 1.4228 [75] @ −25°	$\frac{dn}{dt} = -0.0005286/°C.$ (−25° to +30°)

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Hexyne-2			**0.7305**		$\frac{dD}{dt} = -0.000946/°C.$ (0° to 15°)
C–C≡C–C–C–C	−92 [31]	83 to 84 [28] 83.7 to 84 [31] 84 to 85 [27]	0.7352 [31] @ 15° 0.7376 [32] @ 13° 0.7494 [32] @ 0°	1.4140 [31] $n_{H\alpha}^{15}$	
Hexyne-3			**0.7255$_4$**	**1.4121$_1$**	$\frac{dD}{dt} = -0.0009308/°C.$ (20° to 45°)
C–C–C≡C–C–C	−51 [34]	79 to 80 [34] @ 770mm 82.0 [26] 81.9 [75] 81.0 to 81.5 [78] 81.5 [65] @ 744mm 74.5 [65] @ 600mm 50 [65] @ 245mm 50.0 [77] @ 245mm 11.1 [76] @ 50mm	0.70227 [78] @ 45° 0.7263 [65,76] @ 25° 0.72569 [78] 0.724 [34]	1.4092 [75] @ 25° 1.4112 [65,76] @ 25° 1.4115 [34] 1.4119 [75] 1.4223 [75] @ 0° 1.4331 [75] @ −20° 1.4356 [75] @ −25° 1.4385 [75] @ −30°	$\frac{dn}{dt} = -0.0005237/°C.$ (−30° to +25°)
3-Methylpentyne-1					
C≡C–C–C–C (C on C-3)	65 to 70 [86]	77 [86]			

Name and Carbon Skeleton	*M. P.,°C.*	*B. P.,°C. @ 760mm*	D^{20}_4	n^{20}_D	*Additional Data*
4-Methylpentyne-1					
		61.5 to 62 [35]	0.7244 [35] @ 0°		
4-Methylpentyne-2		**72**			
		71 to 72.5 [37] 72 to 72.5 [74]	0.7321 [37] 0.716 [74] @ 19°	1.4078 [74] @ 19°	
3,3-Dimethylbutyne-1		**38**	**0.6686_0**	**1.37439**	$\frac{dD}{dt} = -0.001070$/°C. (−0° to 20°)
	−81.2 [80]	37.5 to 38.5 [73] 37.6 to 37.8 [69] 37.8 [36] 38 to 39 [25]	0.6683 [80] 0.6682 [36] 0.6695 [73] 0.6737 [80] @ 15° 0.69015 [73] @ 0° 0.6899 [80] @ 0°	1.373778 [73] 1.37493 [36] 1.37725 [80] @ 15°	$\frac{dn}{dt} = -0.000572$/°C. (15° to 20°)

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D^{20}_4	n^{20}_D	*Additional Data*
Heptyne-1		**99.6**	**0.7332**	**1.4083_4**	$\frac{dD}{dt} = -0.0008739/°C.$ (0° to 45°)
C≡C–C–C–C–C–C	−81 to −80 [39]	87 [40] 87 to 88.5 [34] 98.0 [85] 99.4 [75] 99 [41] 99 to 100 [39] 99 to 101 [83] 99.5 to 100 [22] 99.8 [76] 100 [27] 100.4 to 100.8 [68] 98 to 99 [42] @ 740 to 760mm 107 to 110 [49] @ 745mm 43.6 [77] @ 100mm 26.5 [76] @ 50mm 26 [49] @ 10mm	0.71141 [78] @ 45° 0.7246 [34] @ 25° 0.7288 [51] @ 25° 0.7297 [85] @ 25° 0.7272 [40] @ 22° 0.7470 [49] 0.73442 [78] 0.7338 [39] 0.7326 [42] @ 19.5° 0.750 [27] @ 19° 0.7545 [49] @ 15° 0.7384 [41] @ 12.6° 0.7505 [39] @ 0°	1.4057 [75] @ 25° 1.40553 [85] @ 25° 1.4043 [34] @ 25° 1.4023 [40] @ 22° 1.4088 [75] 1.4086 [39] 1.40944 [42] @ 19.5° 1.418 [27] @ 19° 1.41356 [41] @ 12.6° 1.4183 [75] @ 0° 1.4309 [75] @ −25°	$\frac{dn}{dt} = -0.000504/°C.$ (−25° to +25°)

Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Heptyne-2		**111.8**	**0.748$_6$**	**1.4237**	$\frac{dD}{dt} = -0.000729/°C.$ (0° to 25°)
C-C≡C-C-C-C-C		112.0 [76]	0.745 [76,83] @ 25°	1.4220 [76,83] @ 25°	$\frac{dn}{dt} = -0.000602/°C.$ (20° to 25°)
		111.8 [75]	0.748 [43] @ 21°	1.4208 [43] @ 21°	
		111.5 to 113.0 [68]	0.749 [76]	1.4239 [66]	
		111.5 to 112.5 [43]	0.748 [68]	1.4245 [76]	
		111 to 113 [38] @ 750.4mm	0.7632 [38] @ 0°		
		107 to 111 [83] @ 750mm			
		110 to 111 [66] @ 747mm			
		55 [77] @ 100mm			
		39.6 [76] @ 50mm			
Heptyne-3		**106**		**1.422**	$\frac{dn}{dt} = -0.0013/°C.$ (?) (19° to 25°)
C-C-C≡C-C-C-C		105 to 106 [34,38]	0.7337 [34] @ 25°	1.415 [34] @ 25°	
		106 [44]	0.765 [27] @ 19°	1.423 [27] @ 19°	
		106 to 107 [27]	0.760 [38] @ 0°		
		105.3 to 106.7 [68]			
5-Methylhexyne-1		**87**	**0.7339**	**1.4023 @ 22°**	$\frac{dD}{dt} = -0.000882/°C.$ (0° to 20°)
C≡C-C-C-C-C with C on the fifth carbon		87 [48]	0.7272 [48] @ 22°	1.4023 [48] @ 22°	
		92 to 93 [45]	0.7365 [46] @ 17°	1.4075 [46] @ 17°	
			0.7515 [46] @ 0°		

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
4,4-Dimethylpentyne-1 		73 to 75 [47]	0.7154 [47]	1.4028 [47]	
4,4-Dimethylpentyne-2 		82.9 to 83 [69]	0.7176 [69] 0.7224 [69] @ 15°	1.4071 [69] @ 20.1°	$\frac{dD}{dt} = -0.00096/°C.$ [69] (15° to 20°)
3-Ethylpentyne-1 		87 to 88.5 [34]	0.7246 [34] @ 25°	1.4043 [34] @ 25°	

Name and Carbon Skeleton	*M. P., °C*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Octyne-1		**126.0**	**0.7469_6**	**1.4169**	$\frac{dD}{dt} = -0.001011$ $(1-.00351t)$/°C. (0° to 703°)
C≡C-C-C-C-C-C-C	−70 [49] −79 [39] −80 [39]	124 to 125 [39,41] 125.0 [75] 126 [27] 126.0 [76] 127 to 127.5 [22] 127.6 to 128.0 [68] 131 to 132 [38] @ 762.6mm 130.6 to 131.2 @ 756mm [50] 130 to 132 [49] @ 745mm 85.0 [77] @ 200mm 50.8 [76] @ 50mm	0.7040 [51] @ 70° 0.7213 [51] @ 50° 0.743 [76] @ 25° 0.7414 [51] @ 25° 0.7470 [39] 0.762 [27] @ 17° 0.7680 [49] @ 15° 0.7530 [41] @ 12.5° 0.7701 [38] @ 0° 0.7667 [39] @ 0°	1.4140 [76] @ 25° 1.4172 [39] 1.426 [27] @ 17° 1.42075 [41] @ 12.5°	$\frac{dn}{dt} = -0.000566$/°C. (12° to 25°)
Octyne-2		**136**	**0.761 @ 25°**	**1.4285 @ 25°**	
C-C≡C-C-C-C-C-C		131 to 135 [83] 133 to 134 [38] 135.5 to 137 [27] 137.2 [76] 138.0 to 138.4 [68] 77.3 [77] @ 100mm 60.2 [76] @ 50mm	0.761 [76,83] @ 25°	1.4285 [76,83] @ 25°	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Octyne-3		**131**		**1.4261**	$\frac{dn}{dt} = -0.00062/°C.$ (20° to 25°)
C-C-C≡C-C-C-C-C		131 to 131.5 [27] 132.7 [75] 133 [76] 127 to 130 [83] @ 750mm 129 to 130 [66] @ 747mm 131.8 [65] @ 737mm 118.5 [65] @ 498mm 86.7 [65,77] @ 169mm 56.7 [76] @ 50mm	0.7501 [65] @ 25° 0.763 [83] @ 25° 0.748 [66]	1.4230 [65] @ 25° 1.4273 [83] @ 25° 1.4261 [66]	
Octyne-4		**130.6**	**0.7479**	**1.4225**	
C-C-C-C≡C-C-C-C		131 [76] 130.6 [75] 130.4 to 130.6 @ 745mm [83] 130 [65] @ 744mm 116.7 [65] @ 498mm 85.1 [65,77] @ 169mm 55 [76] @ 50mm	0.7474 [65] @ 25° 0.7484 [83] @ 25°	1.4225 [65] @ 25° 1.4226 [83] @ 25°	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_4	n^{20}_D	Additional Data
3-Methyl-3-ethyl-pentyne-1					
C C≡C-C-C-C C-C		98 to 100 [52] @ 745mm	0.7360 [52]	1.4102 [52]	
C_9H_{16}					
Nonyne-1		**151**	**0.763**	**1.425**	
C≡C-C-C-C-C-C-C-C	−65 [49]	149 to 151 [54] 151 [27] 160 [49] @ 745mm	0.760 [27] 0.765 [54] 0.7799 [49] @ 15°	1.426 [51] 1 423 [27]	
Nonyne-2		**160**			
C-C≡C-C-C-C-C-C-C		160.0 [75] 158 to 159 [54] 161 [27] 155 to 156 [66] @ 747mm 112.3 [77] @ 170mm 65.1 [77] @ 25mm	0.768 [27] @ 21° 0.769 [66] 0.770 [54] @ 18°	1.434 [27] @ 21° 1.4331 [66] 1.433 [54] @ 18°	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Nonyne-3		**153**	**0.764**	**1.4299**	
C–C–C≡C–C–C–C–C–C		150 to 154 [83] 151 to 154 [70] 155 to 157 [53] 157 to 160 [44] 153 to 155 [66] @ 745mm	0.762 [83] @ 25° 0.763 [53] 0.765 [66]	1.4300 [83] @ 25° 1.4299 [66] 1.429 [53]	
Nonyne-4					
C–C–C–C≡C–C–C–C–C		155.1 to 156.1 [68] 150 to 154 [83] @ 750mm	0.757 [83] @ 25° 0.7716 [68] @ 25°	1.4296 [83] @ 25° 1.4330 [68] @ 24.9°	
$C_{10}H_{18}$ Decyne-1					
C≡C–(C)$_7$–C	−36 [49] −40 [55]	181 to 182 [49] @ 745mm 74 to 75 [54] @ 19mm 69 to 70 [49] @ 10mm 59 [55] @ 13mm	0.772 [54] @ 17° 0.7924 [49] @ 15° 0.791 [55] @ 0°	1.436 [54] @ 17°	
Decyne-3					
C–C–C≡C–(C)$_5$–C		175 to 176 [54]	0.765 [54] @ 21°	1.433 [54] @ 21°	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Decyne-4					
C–C–C–C≡C–$(C)_4$–C		74.75 [54] @19mm	0.772 [54] @ 17°	1.436 [54] @ 17°	
Decyne-5		**175.3**	**0.768 @ 25°**	**1.4311 @ 25°**	
C–C–C–C–C≡C–$(C)_3$–C		175.3 [75] 172 [83] @ 745mm 115.9 [65] @ 115mm 106.3 [65] @ 80mm 78.8 [65] @ 25mm	0.7673 [65] @ 25° 0.7692 [83] @ 25°	1.4311 [65,83] @ 25°	
$C_{11}H_{20}$ Undecyne-1		**202**	**0.8706**		
C≡C–$(C)_8$–C	−33 [49]	210 to 215 [57] 198 to 202 [56] 202 to 204 [49] @ 745mm 110 to 111 [50] @ 17mm 91 @ 8mm [49]	0.8143 [50] @ 90° 0.8302 [50] @ 70° 0.8465 [50] @ 50° 0.8666 [50] @ 25° 0.8024 [49] @ 15°		$\frac{dD}{dt} = -0.0008053$ (25° to 90°)

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Undecyne-2					
C–C≡C–(C)$_7$–C		199 to 210 [58] 81.5 [58] @ 10.5mm			
Undecyne-5		**196**	**0.785**	**1.437**	
C–C–C–C–C≡C–(C)$_4$–C		195 to 196 [53] 195 to 197 [54]	0.785 [53,54]	1.437 [53,54]	
$C_{12}H_{22}$					
Dodecyne-1					
C≡C–(C)$_9$–C		95 to 97 [59] @ 15mm 95 to 98 [72] @ 15mm	0.7758 [72] @ 24°	1.4351 [72] @ 25.7° 1.4426 [72] @ 8°	$\frac{dn}{dt} = -0.000424$/°C. (8° to 25°)
Dodecyne-2					$\frac{dD}{dt} = -0.0007444$ (0° to 35°)
C–C≡C–(C)$_8$–C	−9 [60]	105 [60] @ 15mm	0.7788 [60] @ 32.5° 0.7917 [60] @ 15° 0.8030 [60] @ 0°		

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Dodecyne-3					
C–C–C≡C–(C)$_7$–C		95 [81] @ 12mm	0.7871 [81]	1.44415 [81]	
Dodecyne-6			**0.787** [6]	**1.4425**	$\frac{dD}{dt} = -0.00123/°C.$ (15° to 30°)
C–C–C–C–C–C≡C–(C)$_4$–C		207.2 [75] 209 [83] @ 745mm 151 [77] @ 124mm 115 [65] @ 30mm 110 [65] @ 23mm 100 @ 14mm 85.0 [77] @ 7.5mm	0.7753 [83] @ 30° 0.7816 [65] @ 25° 0.790 [54] @ 18°	1.4351 [83] @ 30° 1.4374 [65] @ 25° 1.445 [54] @ 18°	$\frac{dn}{dt} = -0.000803/°C.$ (15° to 30°)
$C_{14}H_{26}$					
Tetradecyne-1					
C≡C–(C)$_{11}$–C		128 [59] @ 15mm			
Tetradecyne-2					$\frac{dD}{dt} = -0.0007317/°C.$ (5° to 30°)
C–C≡C–(C)$_{10}$–C	6.5 [60]	134 [60] @ 15mm	0.7892 [60] @ 30° 0.8000 [60] @ 15.2° 0.8064 [60] @ 6.5°		

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Pentadecyne-1					
C≡C–(C)$_{12}$–C		112 to 113 [88] @ 5mm	0.8261[88]	1.4410 [88]	
$C_{16}H_{30}$					
Hexadecyne-1					
C≡C–(C)$_{13}$–C	15 [61,68]	157 to 159 [82] @ 17mm 155 [61] @ 15mm 156 to 157 [68] @ 15mm	0.7965 [61] 0.7999 [61] @ 15°		$\frac{dD}{dt} = -0.000680/°C.$ [61] (15° to 20°)
Hexadecyne-2					$\frac{dD}{dt} = -0.00070/°C.$ (20° to 30°)
C–C≡C–(C)$_{12}$–C	20 [60]	160 [60] @ 15mm 145 to 146 [82] @ 8.5mm	0.7969 [60] @ 30° 0.8039 [60]		
$C_{18}H_{34}$					
Octadecyne-1	**28**		**0.8025**		
C≡C–(C)$_{15}$–C	22.5 [55] 26 [59] 28 [64]	180 [59] @ 15mm	0.7955 [59] @ 30° 0.7983 [59] @ 26° 0.8695 [55] @ 0°		$\frac{dD}{dt} = -0.00070/°C.$ (26° to 30°)

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Octadecyne-2					
C-C≡C-(C)$_{14}$-C	30 [60]	184 [60] @ 15mm	0.8016 [60] @ 30°		
$C_{19}H_{36}$					
Nonadecyne-1					
C≡C-(C)$_{16}$-C	37 to 38 [71]	144 [71] @ 1.5mm			
$C_{20}H_{38}$					
Eicosylene					
		314 to 315 [63]	0.8181 [63] @ 24°		

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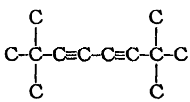
Name and Carbon Skeleton	*M. P., C°.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Butadiyne-1,3	**−36.4**	**10.3**			
Diacetylene	−36.4 [3]	13.6 [2]	0.7107 [4] @ 5°	1.4198 [4] @ 5°	
C≡C–C≡C	−36 to −35 [1]	10.3 [3]	0.7364 [1] @ 0°	1.43862 [1] @ 0.8°	
	−36 to −37 [2]	9.5 to 10 [1,21]			
		10 [4]			
		0 [1] @ 517.6mm			
		0 [2] @ 466.7mm			
		−35.5 [1] @ 93.5mm			
		−40 [2] @ 66.2mm			
		−78.2 [1] @ 1.6mm			
C_5H_4 **Pentadiyne-1,3**					
Methyldiacetylene		54 to 56 [5]	0.7375 [5] @ 21°	0.4431 [5] @ 21°	
C≡C–C≡C–C					
C_6H_6 **Hexadiyne-1,3**					
Ethyldiacetylene		87 [5]			
C≡C–C≡C–C–C					

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_{4}	n^{20}_{D}	Additional Data
Hexadiyne-1,4					
Methylpropargylacetylene		78 to 83 [6]	0.825 [6] @ 0°		
C≡C–C–C≡C–C					
Hexadiyne-1,5			**0.7874**		
Dipropargyl	−6 [6]	86 to 87 [6] 85.4 [7] 19.5 [8] @ 46mm	0.7849 [7] D^{25}_{25} 0.8049 [8] 0.7888 [7] D^{20}_{20} 0.7930 [7] D^{15}_{15} 0.8032 [7] D^{4}_{4} 0.8191 [6] @ 0°		$\frac{dD}{dt} = -0.0009822/°C.$ (0° to 25°)
C≡C–C–C–C≡C					
Hexadiyne-2,4	**64.5**	**129**			
Dimethyldiacetylene	64.5 [5] 64 [6]	129 to 130 [6] 129 [5]			
C–C≡C–C≡C–C					

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Heptadiyne-1,3					
Propyldiacetylene		115 [5]			
C≡C–C≡C–C–C–C					
Heptadiyne-1,5					
C≡C–C–C–C≡C–C		26 to 27 [10] @ 30mm	0.810 [10] @ 21°	1.4521 [10] @ 21°	
Heptadiyne-1,6					
C≡C–C–C–C–C≡C		111.5 to 112.5 [11]	0.8164 [11] @ 17°	1.451 [11] @ 17°	
C_8H_{10} **Octadiyne-1,7**					
C≡C–C–C–C–C–C≡C		135 to 136 [12]	0.8169 [12] @ 21°	1.453 [12] @ 21°	
Octadiyne-2,6					
C–C≡C–C–C–C≡C–C	26.5 to 27 [10]	5.5 [10] @ 13mm	0.828 [10] @ 30°	1.4658 [10] @ 30°	

Name and Carbon Skeleton	*M. P., °C.*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Octadiyne-3,5					
C–C–C≡C–C≡C–C–C		163 to 164 [13]	0.826 [13] @ 0°	1.4968 [13] @ 0°	
C_9H_{12}					
Nonadiyne-1,8					
C≡C–C–C–C–C–C–C≡C	−21 [11]	55.0 to 55.5 [11] @ 13mm	0.8159 [11] @ 21°	1.452 [11] @ 21°	
$C_{10}H_{14}$					
Decadiyne-4,6					
C–C–C–C–C≡C–C≡C–C–C–C		88 @ 12mm [15]			
2,7-Dimethyl-octadiyne-3,5					
C–C(–C)–C≡C–C≡C–C(–C)–C		74 @ 12mm [16]	0.8090 [16]		
$C_{11}H_{16}$					
Undecadiyne-1,10					
C≡C–$(C)_7$≡C	−17 [17]	82.5 to 83 [17] @ 12mm	0.8182 [17] @ 21°	1.453 [17] @ 21°	

Name and Carbon Skeleton	*M. P.,°C*	*B. P., °C. @ 760mm*	D_4^{20}	n_D^{20}	*Additional Data*
Dodecadiyne-5,7					
C–(C)$_3$≡C–C≡C–(C)$_4$		104 @ 8mm [22] 103 @ 8mm [15]			
2,2,7,7-Tetramethyl-octadiyne-3,5					
	130 to 131 [18]				
$C_{13}H_{20}$					
Tridecadiyne-1,12					
C≡C–(C)$_9$–C≡C	−3 to −2 [19]	115.5 [19] @ 12mm	0.8262 [19] @ 21°	1.454 [19]	
$C_{14}H_{22}$					
Tetradecadiyne-6,8					
C–(C)$_4$–C≡C–C≡C–(C)$_4$–C		118 to 119 [15] @ 12mm			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Pentadecadiyne-6,9					
C–(C)$_4$–C≡(C)$_3$≡C–(C)$_4$–C		134 to 136 [20]	0.84 [20]	1.4693 [20] @ 21°	
$C_{16}H_{26}$					
Hexadecadiyne-1,15					
C≡C–(C)$_{12}$–C≡C	44 to 45 [17]	152 to 155 [17] @ 12mm			
Hexadecadiyne-6,9					
C–(C)$_4$–C≡(C)$_3$≡C–(C)$_5$–C		169 to 170 [20] @ 15mm	0.845 [20] @ 18°	1.4694 [20] @ 18°	
Hexadecadiyne-6,10					
C–(C)$_4$–C≡(C)$_4$≡C–(C)$_4$–C		157 to 158 [20] @ 10mm	0.846 [20] @ 17°	1.4686 [20] @ 22°	
$C_{17}H_{28}$					
Heptadecadiyne-7,10					
C–(C)$_5$–C≡(C)$_3$≡C–(C)$_5$–C		150 to 155 [20] @ 6mm	0.84 [20] @ 19°	1.4700 [20] @ 19°	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Octadecadiyne-7,11					
C–(C)$_5$–C≡(C)$_4$≡C–(C)$_5$–C		167 to 168 [20] @ 7mm	0.84 [20] @ 19°	1.4698 [20] @ 19°	
$C_{20}H_{34}$					
Eicosadiyne-1,19					
C≡C–(C)$_{16}$–C≡C	54 to 56 [19]				
$C_{23}H_{40}$					
Tricosadiyne-10,13					
C–(C)$_8$–C≡(C)$_3$≡C–(C)$_8$–C	26 to 31 [20]				
$C_{24}H_{42}$					
Tetracosadiyne-10,14					
C–(C)$_8$–C≡(C)$_4$≡C–(C)$_8$–C	38.5 to 39 [20]				
$C_{36}H_{66}$					
Hexatria-contadiyne-17,19					
C–(C)$_{15}$–C≡C–C≡C–(C)$_{15}$–C	59 [21]				

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Name and Carbon Skeleton	*M. P.,°C.*	*B. P., °C.* @ 760mm	D_4^{20}	n_D^{20}	*Additional Data*
Buten-3-yne-1					
Vinylacetylene C≡C-C=C		5 @ 757mm [1] 2 to 3 @ 729mm	0.705 [1] @ 1.5° 0.7095 [1] @ 0°		
C_5H_6					
Penten-1-yne-3					
1-Methyl-2-vinylacetylene C=C-C≡C-C		59.2 [2]	0.7401 [2]	1.4496 [2]	
Penten-1-yne-4					
Allylacetylene C=C-C-C≡C		41 to 42 [3]	0.777 [3] D_{22}^{22}	1.3653 [3] @ 22°	
2-Methylbuten-1-yne-3					

C=C-C≡C
   |
   C
		34 [6]
		32 to 32.5 [5]
		32 to 35 [4]
			0.6801 [4] @ 110°	1.41666 [4] n_α
				1.43046 [4] n_β	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Hexen-1-yne-3 C=C–C≡C–C–C		84.5 to 85.3 [2] @ 758mm 83 @ 742mm [7]	**0.749** 0.7492 [2] 0.748 [7]	1.4523 [7] 1.4522 [2]	
Hexen-5-yne-1 Diallylene C≡C–C–C–C=C		70 [8]	0.8579 [8] @ 18.2°		

2-Methylpenten-1-yne-3
C=C–C≡C–C
    |
    C
		75 to 77 [9]		1.4002 [9]	

3-Methylpenten-3-yne-1
(Mixtures of *cis*, *trans* isomers)
C≡C–C=C–C
       |
       C
		68 to 71 [6]
		67 to 69 [5]
				1.4332 [5]	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_4	n^{20}_D	Additional Data
Hepten-1-yne-3 C=C–C≡C–C–C–C		109 to 110 [10] @ 750mm	0.787 [10] @ 25°	1.4694 [10] @ 25°	
2-Methylhexen-3-yne-5 (Mixtures of *cis*, *trans* isomers) C–C(–C)–C=C–C≡C		117 to 120 [11] @ 750mm 60 to 80 [11] @ 80mm			
C_8H_{12} **Octen-1-yne-3** 1-Butyl-2-vinylacetylene C=C–C≡C–C–C–C–C		62 to 63 [2] @ 61mm 59 to 60 [2] @ 50mm	0.7830 [2]	1.4592 [2]	
2-Methylhepten-4-yne-6 C–C(–C)–C–C=C–C≡C		126 to 129 [11] @ 750mm			

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Nonen-1-yne-4					
C=C-C-C≡C-$(C)_4$-C-C-C		58 @ 22mm [10]	0.777 [10] @ 25°	1.4694 [10] @ 25°	
$C_{10}H_{16}$					
Decen-1-yne-4					
C=C-C-C=C-$(C)_4$-C		73 to 74 [10] @ 22mm	0.785 [10] @ 25°	1.459 [12] @ 15°	
		82 to 85 [12] @ 18 to 20mm	0.806 [12] D_{11}^{11}	1.444 [10] @ 15°	
$C_{11}H_{18}$					
Undecen-1-yne-3					
1-Heptyl-2-vinylacetylene		74.5 @ 9mm [2]	0.7962 [2]	1.4606 [2]	
C=C-C≡C-$(C)_6$-C					

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Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
Octatriene-1,5,7-yne-3					
C=C–C≡C–C=C–C=C		156 [1] (Decomposition) 82 @ 100mm [1] (Polymerization) 50 @ 30mm [1] 40 @ 20mm [1]	0.830 [1]	1.576 [1]	
$C_{11}H_{14}$ **4-Vinyl-4-ethinyl-heptadiene-1,6 (?)**					
C≡C | C=C–C–C–C–C–C=C | C=C		49 @ 20mm [2]	0.819 [2]	1.472 [2]	
$C_{30}H_{52}$ **Dihydrosqualene**					
		237 @ 3mm [3]	0.8529 [3]	1.4872 [3]	

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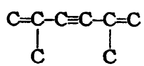
Name and Carbon Skeleton	M. P., °C.	B. P. °C. @ 760mm	D^{20}_4	n^{20}_D	Additional Data
Hexadiene-1,3-yne-5					
(Mixtures of geometrical isomers) C=C–C=C–C≡C		56 to 57 [2] @ 200mm 32 [1] @ 100mm	0.7821 [1] D^{20}_{20} 0.7880 [2] @ 15°	1.5058 [2] 1.4900 [1]	
Hexadiene-1,5-yne-3		**83.5**	**0.7852**	**1.504**	
C=C–C≡C–C=C		84.5 to 85 [4] 83.5 [3] 46 to 47 [2] @ 200mm	0.7857 [2] 0.7851 [3] 0.7723 [4]	1.5045 [2] 1.504 [3] 1.498 [4]	
C_8H_{10}					
2,5-Dimethylhexadiene-1,5-yne-3					
		123 to 124 [6] 32 [5] @ 17mm	0.7898 [6] @ 15°	1.4859 [6]	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
3-Allylpenten-1-yne-4 C=C–C–C≡C | C–C=C		120 to 125 [9]			
$C_{10}H_{14}$					
3,6-Dimethyloctadiene-2,6-yne-4 (Mixtures of geometrical isomers) C–C=C–C≡C–C=C–C | | C C	−45 [6]	170 [6] 71 [5] @ 20.5mm	0.8071 [6]	1.4977 [6]	
$C_{12}H_{18}$					
3,6-Diethyloctadiene-2,6-yne-4 (Mixtures of geometrical isomers) C–C=C–C≡C–C=C–C | | C–C C–C		80 to 81 [7] @ 5mm	0.8196 [7]	1.4965 [7]	

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_{4}	n^{20}_{D}	Additional Data
6,9-Dimethyltetradecadiene-5,9-yne-7 (Mixtures of geometrical isomers) C–(C)$_3$–C=C–C≡C–C=C–(C)$_3$–C (C on 6th and 9th carbons: C, C)		95 to 98 [8] @ 0.5mm	0.824 [8]	1.4866 [8]	
4,7-Dipropyldecadiene-3,7-yne-5 (Mixtures of geometrical isomers) C–C–C=C–C≡C–C=C–C–C C–C–C C–C–C		125 to 127 [6] @ 18mm	0.81313 [6] @ 19°	1.4890 [6]	

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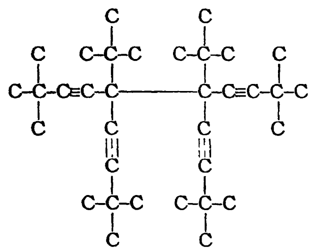
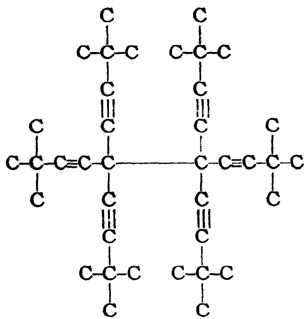
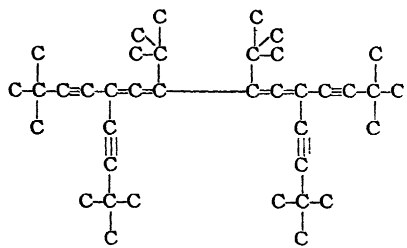
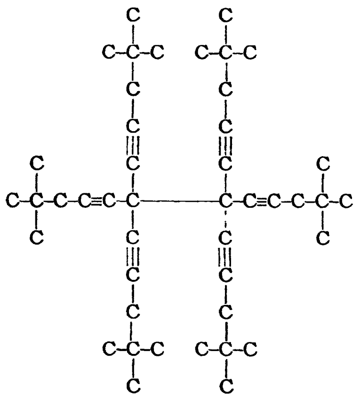
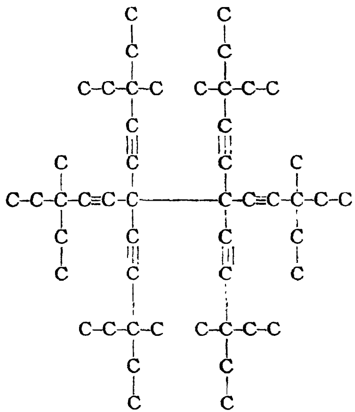
(9) V. Grignard, L. Lapayre, and Tcheoufaki, Compt. rend. **187,** 517, **1928.**

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
$C_{34}H_{54}$					
2,2,9,9-Tetramethyl-5,6-diisobutyl-5,6-*di*-(3,3-dimethylbutyn-1-*yl*)-decadiyne-3,7					
Ditertbutyl-tetra [tert-butylethynyl] ethane	120 to 120.5 [1]				
					

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_4	n^{20}_D	Additional Data
$C_{38}H_{54}$					
2,2,9,9-Tetramethyl-5,5,6,6-tetra-(3,3-dimethyl-butyn-1-*yl*)-decadiyne-3,7					
(Hexa-[tert-butylethynyl] ethane 	130 to 131 [2]				

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D_4^{20}	n_D^{20}	Additional Data
$C_{38}H_{54}$					
2,2,13,13-Tetramethyl-7,8-*tert*-butyl-5,10-*di* (3,3-dimethylbutyn-1-*yl*)-tetradeca-tetraene-5,6,8,9-diyne-3,11					
2,2,13,13-Tetramethyl-5,10-di-tert-butyl-ethynyl-7,8-di-tert-butyl-tetradeca-tetraene-5,6,8,9-diyne-3,11					
	172 to 173 [5]				

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_4	n^{20}_D	Additional Data
$C_{42}H_{62}$					
2,2,11,11-Tetramethyl-6,6,7,7-tetra-(4,4-dimethylpentyn-1-*yl*)-dodecadiyne-4,8 (Hexa-[ω-tert-butylpropynyl] ethane) 	127.5 to 128.5 [3]				

Name and Carbon Skeleton	M. P., °C.	B. P., °C. @ 760mm	D^{20}_4	n^{20}_D	Additional Data
$C_{60}H_{78}$					
3,10-Dimethyl-3,10-diethyl-6,6,7,7-tetra (3-methyl-3-ethyl-pentyn-1-*yl*)-dodecadiyne-4,8					
Hexa-[3-ethyl-3-methyl-1-pentyn-yl]-ethane 	122 to 127 [4]				

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